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ENVIRONMENTAL POLLUTION. NOISE POLLUTION-NOISE EFFECTS ON HUMAN--ETC(U)  
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**AD-A041 600**

**DDC/BIB-77/07**

# **ENVIRONMENTAL POLLUTION**

## **NOISE POLLUTION - NOISE EFFECTS**

### **ON HUMAN PERFORMANCE**

**A DDC BIBLIOGRAPHY**

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Cameron Station  
Alexandria, Va. 22314**

**JUNE 1977**

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This bibliography is a selection of unclassified and unlimited distribution references on Noise Pollution-Noise Effects on Human Performance. These citations of reports present information on noise effects on human performance such as motor reactions, hearing speech, sleep, perception, nervous systems, visual signals and fatigue. Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.		

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Item 19 KEY WORDS (Cont'd)

Thresholds (Physiology)  
Psychoacoustics  
Blast  
Helicopters  
Environments  
Supersonic Aircraft  
Diving  
Hyperbaric Atmospheres  
Nuclear Explosions  
Sonic Boom  
Jet Plane Noise  
Jet Engine Noise

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## FOREWORD

This unclassified and unlimited bibliography contains 254 selected citations of reports on *Noise Pollution - Noise Effects On Human Performance*. These citations are studies and analyses pertaining to noise effect on humans, such as motor reactions, hearing, speech, sleep, perception, nervous system, visual signals and fatigue.

This bibliography supersedes *Environmental Pollution: Noise Pollution - Noise Effects On Human Performance*, AD-729 850, DDC-TAS-71-39-I, dated August 1971 and AD-769 900, DDC-TAS-73-69, dated November 1973.

Entries are sequenced by AD number. Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.

BY ORDER OF THE DIRECTOR, DEFENSE LOGISTICS AGENCY

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HUBERT E. SAUTER  
Administrator  
Defense Documentation Center

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PERSONAL AUTHOR . . . . .	

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 51 868

NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA

SPEECH RECEPTION AND TEMPORARY HEARING LOSS AS A  
FUNCTION OF EXPOSURE TO HIGH LEVEL NOISE (U)

OCT 54 IV TOLHURST, GILBERT C.;

REPT. NO. JPR32

CONTRACT: N6ONR22525

PROJ: NM 001 064 01 32

UNCLASSIFIED REPORT

DESCRIPTORS: •HEARING, •NOISE, •SPEECH, INTELLIGIBILITY,  
PHYSIOLOGY, PSYCHOACOUSTICS, THRESHOLDS (PHYSIOLOGY) (M)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 86 107

RADIO CORP OF AMERICA CAMDEN N J DEFENSE ELECTRONIC  
PRODUCTS

STUDY OF COMMUNICATION IN HIGH LEVEL AMBIENT NOISE  
FIELDS (U)

DESCRIPTIVE NOTE: REPT. NO. 5, 1 AUG-31 OCT 55,  
OCT 55 33P

CONTRACT: DA-36-039-SC-64469

UNCLASSIFIED REPORT

DESCRIPTORS: •ACOUSTICS, •ARMORED VEHICLES,  
•HELICOPTERS, •VOICE COMMUNICATIONS, INTELLIGIBILITY,  
INTERFERENCE, MEASUREMENT, NOISE, SPEECH (M)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 86 351

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

THE INFLUENCE OF HIGH INTENSITY NOISE ON VISUAL  
THRESHOLDS

(U)

FEB 56 26P

COLEMAN, PAUL D.; KRAUSKOPF, JOHN;

REPT. NO. USAMRL-222

PROJ: DA-69520001

UNCLASSIFIED REPORT

DESCRIPTORS: •PSYCHOACOUSTICS, •THRESHOLDS (PHYSIOLOGY),  
•VISION, ACOUSTICS, INTENSITY, NOISE (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 86 352

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

THE EFFECT OF NOISE ON EYE MOVEMENTS

(U)

FEB 56 IV

KRAUSKOPF, J.; COLEMAN, P. D.;

REPT. NO. USAMRL-218

PROJ: DA-69520001

UNCLASSIFIED REPORT

DESCRIPTORS: •VISION, ACOUSTICS, EYE, MOTION, NOISE (M)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 93 006

RADIO CORP OF AMERICA CAMDEN N J DEFENSE ELECTRONIC  
PRODUCTS

STUDY OF COMMUNICATION IN HIGH-LEVEL AMBIENT NOISE  
FIELDS

(U)

DESCRIPTIVE NOTE: REPT. NO. 6, 1 DEC 55-15 FEB 56.  
FEB 56 14P

CONTRACT: DA-36-039-SC-64469

UNCLASSIFIED REPORT

DESCRIPTORS: •ARMORED VEHICLES, •HELICOPTERS, •NOISE,  
•SPEECH, •VOICE COMMUNICATIONS, ACOUSTICS,  
INTELLIGIBILITY, INTERFERENCE, MEASUREMENT

(M)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 109 230

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

DESCRIPTION OF HUMAN ROTATION DEVICE

(U)

MAY 56 17P

GUEDRY, F.E. JR.; KALTER, H.;

REPT. NO. USAMRL-242

PROJ: DA-69520001

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRBURST, \*NERVES, DECELERATION,  
PSYCHOLOGY, ROTATION, TEST EQUIPMENT, VELOCITY

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 129 446

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

THE EFFECTS OF NOISE ON WORK OUTPUT AND PHYSIOLOGICAL  
ACTIVATION (U)

MAR 57 25P HELPER, M.M.;  
REPT. NO. USAMRL-270

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE, \*PSYCHOACOUSTICS, MUSCLES,  
PHYSIOLOGY, SKIN(ANATOMY) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 146 756

AIR FORCE CAMBRIDGE RESEARCH CENTER WASHINGTON D C  
OPERATIONAL APPLICATIONS LAB

TEMPORARY THRESHOLD SHIFT AS A FUNCTION OF NOISE  
EXPOSURE LEVEL

(U)

DEC 57 4P TRITTIPOE, W.J.;  
MONITOR: AFCRL TN-57-9

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE, ACOUSTICS, HEARING, INTENSITY,  
THRESHOLDS (PHYSIOLOGY)

(M)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 245 980

NRC COMMITTEE ON HEARING AND BIO-ACOUSTICS WASHINGTON D  
C

THE PROBLEMS OF CRITERIA FOR NOISE EXPOSURE

(U)

OCT 60 IV ELDREDGE, DONALD H.;  
CONTRACT: NONR230005  
MONITOR: AMC TR7 816 VI

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*NOISE, AUDIOMETRY, DEAFNESS,  
EAR, HAZARDS, PHYSIOLOGY, STANDARDS

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 256 800

MASSACHUSETTS MENTAL HEALTH CENTER BOSTON

THE EFFECT OF EXPOSURE TO DICHOTIC NOISE ON THE  
DISCRIMINATION OF DICHOTIC TIME DIFFERENCES

(U)

APR 61 IV

FREEDMAN, SANFORD J.; PFAFF, DONALD W.;

CONTRACT: AF33 616 7625

MONITOR: AFOSR 503

UNCLASSIFIED REPORT

DESCRIPTORS: •EAR, •MOTOR REACTIONS, •PROPRIOCEPTION,  
•PSYCHOACOUSTICS, •SENSES(PHYSIOLOGY), MOTION, NOISE,  
STIMULATION(PHYSIOLOGY), THEORY

(U)

SUBJECTS WERE EXPOSED, UNDER THREE CONDITIONS OF  
MOTILITY, TO A CONSTANTLY CHANGING AUDITORY FIELD  
PRODUCED BY TWO SEPARATE NOISE-GENERATING SYSTEMS,  
EACH FEEDING THE SOUND INTO ONE EAR. AFTER TWO  
HOURS OF CONTINUOUS EXPOSURE, ELEVEN OUT OF TWELVE  
AMBULATORY SUBJECTS SHOWED INCREASED VARIABILITY IN  
AN AUDITORY LOCALIZATION TASK, THE DISCRIMINATION OF  
DICHOTIC TIME DIFFERENCES. PERFORMANCE AFTER TWO  
HOURS UNDER THE SAME CONDITIONS OF EXPOSURE  
DETERIORATED FOR ONLY FIVE OUT OF TWELVE SUBJECTS  
WHEN BODY MOVEMENTS WERE RESTRICTED. WHEN THE  
SUBJECTS WERE WHEELED IN A WHEELCHAIR, SITTING  
QUIETLY EXCEPT FOR FREQUENT HEAD ROTATIONS, NINE OUT  
OF TWELVE SUBJECTS SHOWED INCREASED VARIABILITY.  
THAT IS, SELF-PRODUCED MOTION OF AT LEAST THE HEAD,  
WHILE LISTENING TO DICHOTIC NOISE WHICH MASKED  
BACKGROUND SOUNDS, WAS NECESSARY TO DISRUPT ACCURATE  
AUDITORY LOCALIZATION. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 257 643

PHILCO NEWPORT BEACH CALIF AERONUTRONIC DIV

LAUNCH SITING CRITERIA FOR HIGH-THRUST VEHICLES (U)

MAR 61 IV OSLAKE, J.J.; DOBRIN, S.;

REPT. NO. U 108 118

CONTRACT: N123 61756 23304

UNCLASSIFIED REPORT

DESCRIPTORS: •GUIDED MISSILES, •HAZARDS, •LAUNCHING SITES, •ROCKETS, •SATELLITES (ARTIFICIAL), ACOUSTICS, AIRFRAMES, ATMOSPHERES, ATTITUDES (PSYCHOLOGY), BOOSTER ROCKETS, CLIMATE, DEFLECTION, DESIGN, DETONATIONS, DIFFUSION, EXHAUST GASES, EXPLOSIONS, LAUNCHING, PHYSIOLOGY, PROPAGATION, PROPELLANTS, ROCKET ENGINE NOISE, SELECTION, STRUCTURES, TOXICITY (U)

A COMPREHENSIVE TECHNIQUE FOR DETERMINING THE MAGNITUDE OF POTENTIAL LAUNCH HAZARDS IS DEVELOPED AS AN INTERMEDIATE STEP IN THE PROCESS OF SELECTING OPTIMUM LAUNCH SITES FOR VERY HIGH-THRUST BOOSTER ENGINES. THREE CHARACTERISTIC LAUNCH SITE HAZARDS ARE CONSIDERED: ACOUSTICS, EXPLOSIONS, AND TOXICITY. THE SITING CRITERIAL DEVELOPED ARE GENERALLY APPLICABLE TO MOST POTENTIAL LAUNCH SITES. IN ORDER TO ILLUSTRATE THE SITE SELECTION PROCEDURE A HYPOTHETICAL THREE STAGE LAUNCH VEHICLE (9 MILLION POUNDS THRUST), AND A PROSPECTIVE LAUNCH AREA WITH REALISTIC ENVIRONMENTAL CONDITIONS ARE POSTULATED. THE RESULTING HAZARD ESTIMATES ARE EMPLOYED TO SPECIFY A PARTICULAR LAUNCH COMPLEX LOCATION AND CONFIGURATION, AND TO ESTABLISH LAUNCHING CONSTRAINTS IMPOSED BY THE ASSUMED ENVIRONMENT. SEVERAL FIELD SURVEYS ARE FOUND NECESSARY TO PROVIDE CRITICAL DATA ABOUT POTENTIAL LAUNCH SITES FOR THE ASSESSMENT OF HAZARDS. TWO OF THESE, AN ACOUSTICAL MEASUREMENT PROGRAM AND GAS RELEASE TESTS, ARE DESCRIBED. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM07

AD- 259 830

AIR PROVING GROUND CENTER EGLIN AFB FLA

SAFETY OF PERSONNEL DURING AN IM-99A MISSILE  
LAUNCHING

(U)

JUN 61 24P LANEY, SHERRILL G.;  
REPT. NO. APGC-TN-61-24

UNCLASSIFIED REPORT

DESCRIPTORS: •AVIATION SAFETY, •GUIDED MISSILES,  
•LAUNCHING, •SAFETY, AIR, EAR, GASES, HAZARDS,  
LABORATORY ANIMALS, NOISE, PERSONNEL, PHYSIOLOGY,  
RESPIRATORY SYSTEM, SURFACE TO AIR, TEMPERATURE, TESTS,  
TOXICITY (U)  
IDENTIFIERS: BOMARC (U)

THE OBJECTIVE OF THIS TEST WAS TO DETERMINE THE  
RELATIVE SAFETY OF PERSONNEL IN SEVERAL SELECTED  
AREAS DURING AN IM-99A LAUNCHING. DATA WERE  
COLLECTED RELATIVE TO FREE-AIR TEMPERATURE, NOISE,  
AND TOXIC GASES WHICH CONTRIBUTE TO PERSONNEL  
HAZARDS. BASED ON THE ANALYSIS OF THE DATA  
OBTAINED BY PHYSICAL MEASUREMENTS AND FROM TEST  
ANIMALS, SURVIVABILITY OF PERSONNEL REMAINING AT FIVE  
OF THE SEVEN TEST LOCATIONS IN THE LAUNCH AREA DURING  
MISSILE LAUNCHINGS WOULD BE 100%. HOWEVER,  
PERSONNEL REMAINING IN THE LAUNCH AREA MAY EXPERIENCE  
BOTH TEMPORARY AND PERMANENT EAR DAMAGE AND  
IRRITATIONS OF THE RESPIRATORY TRACT RESULTING FROM  
TOXIC GAS EXPOSURE. (AUTHOR) (U)

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AD- 260 955

BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

METHODS OF SPACE VEHICLE NOISE PREDICTION

(U)

SEP 60

IV

FRANKEN, PETER A.;

CONTRACT: AF33 616 6217

UNCLASSIFIED REPORT

DESCRIPTORS: \*ACOUSTICS, \*NOISE, \*SATELLITES (ARTIFICIAL), \*SPACECRAFT, AERODYNAMIC CHARACTERISTICS, AIRFRAMES, ATMOSPHERES, BOUNDARY LAYER, CYLINDRICAL BODIES, DAMPING, HUMAN FACTORS ENGINEERING, INTELLIGIBILITY, LAUNCHING, MANNED, MATHEMATICAL ANALYSIS, MATHEMATICAL PREDICTION, METEORITES, OSCILLATION, COMMUNICATION AND RADIO SYSTEMS, ROCKET ENGINE NOISE, ROCKET ENGINES, SHEETS, SOUND TRANSMISSION, SPEECH, SUPERSONIC FLOW, TURBULENCE, TURBULENT BOUNDARY LAYER, VOICE COMMUNICATIONS, WAKE (U)

POSSIBLE SOURCES OF NOISE IN SPACE VEHICLES ARE REVIEWED. INFORMATION IS SUMMARIZED DESCRIBING THE VARIOUS FLUCTUATING PRESSURE FIELDS THAT MAY EXIST AT THE VEHICLE EXTERIOR. THE RESPONSE OF THE VEHICLE STRUCTURE TO THESE PRESSURE FIELDS AND THE RESULTING RADIATION OF NOISE TO THE INTERNAL SPACES ARE STUDIED ANALYTICALLY. THE NEED FOR NEW THEORETICAL AND EXPERIMENTAL KNOWLEDGE IN SPECIFIC AREAS IS EMPHASIZED. THE EFFECTS OF ROCKET ENGINE NOISE ON COMMUNICATION AND HEARING ARE CONSIDERED IN DETAIL. GENERAL COMMENTS ARE MADE CONCERNING VEHICLE AND EQUIPMENT DESIGN FOR NOISE CONTROL. (AUTHOR) (U)

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AD- 261 505

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT ACTIVITY WHITE  
SANDS MISSILE RANGE N MEX

LAUNCH NOISE DISTRIBUTION OF NIKE-ZEUS MISSILES (U)

JUL 60 IV SPRINGER, HAROLD S.; OLSEN, ROBERT O.;

UNCLASSIFIED REPORT

DESCRIPTORS: \*EAR, \*GUIDED MISSILES, \*LAUNCHING, \*NOISE,  
\*ROCKET ENGINE NOISE, BLAST, GUIDED MISSILE LAUNCHERS,  
GUIDED MISSILE PERSONNEL, HAZARDS, INSTRUMENTATION,  
LAUNCHING SITES, MEASUREMENT, MEASUREMENT, METEOROLOGY,  
SAFETY, SOUND TRANSMISSION, SURFACE TO AIR, TEST  
FACILITIES, TESTS, WOUNDS AND INJURIES (U)  
IDENTIFIERS: NIKE-ZEUS (U)

MAXIMUM SOUND PRESSURE LEVELS AVERAGING 115  
DECIBELS, WITH EXTREME VALUES OF 90 AND 128 DECIBELS,  
WERE MEASURED ABOUT ONE MILE BEHIND THE NIKE ZEUS  
MISSILE LAUNCHER FOR THE VARIETY OF  
METEOROLOGICAL CONDITIONS OCCURRING DURING FOUR  
MONTHLY TESTS. ADDITIONAL SMALL SAMPLES OF DATA  
TAKEN BOTH NEAR THE LAUNCHER AND AT TWO MILES DISTANCE  
FROM THE SOUND SOURCE SUGGEST A 20-DECIBEL DECLINE  
IN PEAK NOISE LEVEL PER MILE. THE DECAY OF THE  
NOISE LEVEL FOLLOWING PEAK WAS BETWEEN TWO AND THREE  
DECIBELS PER SECOND FOR THE FIRST TEN SECONDS. A  
FREQUENCY ANALYSIS OF THE SOUND LEVEL MEASURED AT  
LAUNCH INDICATES THAT FREQUENCIES BELOW 125 CPS ARE  
PREDOMINANT. UNDER MOST METEOROLOGICAL CONDITIONS,  
THE SOUND PRESSURE LEVELS AT ONE MILE BEHIND THE  
LAUNCHER WOULD NOT BE GREAT ENOUGH TO CAUSE ANY  
STRUCTURAL DAMAGE OR PERSONNEL INJURY. THE LEVELS  
WOULD BE ABOVE 90 DECIBELS HOWEVER, WHICH APPROACH  
THE LEVEL AT WHICH COMPLAINTS OF ANNOYANCE BECOME  
FREQUENT. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 265 502

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

INTRA-AURAL TEMPORARY THRESHOLD SHIFT  
DIFFERENCES

(U)

AUG 61 IV WALDRON, DARYLE L.; MCNEE, RICHARD C.;

UNCLASSIFIED REPORT

DESCRIPTORS: •EAR, •HEARING, •THRESHOLDS (PHYSIOLOGY),  
MEASUREMENT, NOISE (U)

A STUDY IS DESCRIBED WHICH ATTEMPTS TO ANSWER THE  
FOLLOWING INQUIRY: DO THE LEFT AND RIGHT EARS OF  
AN INDIVIDUAL EXPERIENCE THE SAME DEGREE OF  
THRESHOLD SHIFT, AND RECOVER AT THE SAME RATE, WHEN  
SUBJECTED TO WHITE NOISE OF RELATIVELY HIGH INTENSITY  
LEVELS. RESULTS INDICATE THAT THE ANSWER IS IN THE  
NEGATIVE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 266 866

DEFENSE ATOMIC SUPPORT AGENCY WASHINGTON D C

THE SOUND INTENSITY OF A SHOCK WAVE AS RELATED TO  
OVERPRESSURE

(U)

OCT 61  
REPT. NO. 540

IV

BAKKEN, BOYD A.;

UNCLASSIFIED REPORT

DESCRIPTORS: \*SHOCK WAVES, \*SOUND, \*SOUND TRANSMISSION,  
HEARING, INTENSITY, THRESHOLDS (PHYSIOLOGY)

(U)

THIS REPORT DEALS WITH THE SOUND INTENSITY OF A  
BLAST WAVE AND ITS NOISE LEVEL BASED ON THE  
THRESHOLD OF HUMAN HEARING. SINCE THE SOUND LEVEL  
DEPENDS ON AMBIENT CONDITIONS, THE EFFECT OF ALTITUDE  
WAS CONSIDERED BY DETERMINING THE RELATIVE CHANGE  
BETWEEN SEA LEVEL AND 5000 FT. EXPRESSIONS FOR  
SOUND LEVEL AS A FUNCTION OF OVERPRESSURE ARE  
PRESENTED. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 271 605

BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

MASKING OF PURE TONES AND SPEECH

(U)

OCT 61 IV CARTER, N.L.; KRYTER, K.D.  
CONTRACT: AF19 604 4061  
MONITOR: ESD TDR62 1

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*SPEECH TRANSMISSION, AUDIOMETRY,  
NOISE (RADIO), PITCH DISCRIMINATION, COMMUNICATION AND  
RADIO SYSTEMS, THRESHOLDS (PHYSIOLOGY) (U)

THE MASKING EFFECTS OF INTENSE PURE TONES AND BANDS  
OF NOISE UPON OTHER PURE TONES AND SPEECH WERE  
INVESTIGATED. OF PERHAPS SPECIAL IMPORTANCE ARE  
THE MASKING EFFECTS OF VERY INTENSE LOW FREQUENCY  
SOUNDS, IN THAT LOW FREQUENCY SOUNDS ARE PRESENT NEAR  
MISSILE LAUNCH SITES. ON THE BASIS OF THE TEST  
RESULTS, SPREAD OF MASKING FUNCTIONS WERE OBTAINED  
THAT CAN BE INCORPORATED INTO PROCEDURES FOR THE  
CALCULATION OF A NEW ARTICULATION INDEX THAT WILL  
BE VALID FOR A MUCH WIDER VARIETY OF NOISE CONDITIONS  
THAN HERETOFORE POSSIBLE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 273 779

NAVAL WEAPONS LAB DAHLGREN VA

TALOS STRUCTURAL FIRING TEST ABOARD THE USS LONG  
BEACH (CGN-9)

(U)

MAR 62 IV WIGGINS, P.P.; DODSON, T.I.;

UNCLASSIFIED REPORT

DESCRIPTORS: \*BLAST, \*CRUISERS, \*GUIDED MISSILES,  
\*HAZARDS, BOOSTER ROCKETS, BULKHEADS, DAMAGE, EXHAUST  
FLAMES, EXHAUST GASES, EXPLOSION EFFECTS, GUIDED MISSILE  
PERSONNEL, LAUNCHING, MEASUREMENT, NOISE, PERSONNEL,  
POISONOUS GASES, SHIP DECKS, SHIPBOARD, SURFACE TO  
AIR

(U)

IDENTIFIERS: TALOS, CGN 9 VESSEL

(U)

SIX TALOS MK 11 MOD 2 BOOSTERS WITH CONCRETE  
SLUGS WERE FIRED ABOARD THE USS LONG BEACH  
(CGN9) TO INVESTIGATE THE ADEQUACY OF THE  
PROTECTION FOR TALOS PERSONNEL AGAINST BLAST  
EFFECTS AND TO DETERMINE THE EFFECTS OF THE BOOSTER  
BLAST ON THE SHIP'S STRUCTURE. THE TEST VEHICLES  
WERE FIRED AT VARIOUS ANGLES OF TRAIN AND ELEVATION  
SUCH THAT THE EXHAUST STREAM WAS DIRECTED AT AREAS  
THOUGHT TO IMPOSE THE MOST SEVERE CONDITIONS ON THE  
SHIP'S STRUCTURAL COMPONENTS AND EQUIPMENT.  
MEASUREMENTS WERE MADE OF STRUCTURAL STRAINS, TOXIC  
GAS CONCENTRATIONS, NOISE LEVELS, FLAME PENETRATIONS  
AT DOOR AND PORT SEALS, AND TEMPERATURE CHANGES  
INSIDE THE SHIP AND IN THE BLAST AREA OF THE O1 LEVEL  
AND THE MAIN DECK. HIGH-SPEED MOTION PICTURES WERE  
TAKEN ON ALL TESTS. THE RESULTS INDICATED MINOR  
GAS LEAKAGE AROUND THE BLAST DOORS, TOXIC GAS LEAKAGE  
INTO THE VENTILATION SYSTEMS, AND MINOR STRUCTURAL  
DAMAGE TO EQUIPMENT MOUNTED ON THE SIDES OF THE  
MISSILE HOUSE AND THE MAIN DECK. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM07

AD- 276 988

AIR PROVING GROUND CENTER EGLIN AFB FLA

SAFETY OF PERSONNEL DURING AN IM-99B MISSILE  
LAUNCHING

(U)

JUN 62 IV LANEY, SHERRILL G.;  
REPT. NO. TDR62 38

UNCLASSIFIED REPORT

DESCRIPTORS: \*GUIDED MISSILE PERSONNEL, \*GUIDED  
MISSILES, \*LAUNCHING SITES, EAR, EXHAUST GASES, HAZARDS,  
LAUNCHING, NOISE, PHYSIOLOGY, ROCKET ENGINE NOISE,  
SAFETY, STRESS (PHYSIOLOGY), SURFACE TO AIR,  
TEMPERATURE, TOXICITY  
IDENTIFIERS: BOMARC

(U)

(U)

THE RELATIVE SAFETY OF PERSONNEL IN SEVERAL  
SELECTED AREAS WAS STUDIED DURING AN IM-99B  
LAUNCHING. DATA WERE COLLECTED RELATIVE TO FREE-  
AIR TEMPERATURE, NOISE, AND TOXIC GASES WHICH  
CONTRIBUTE TO PERSONNEL HAZARDS. BASED ON AN  
ANALYSIS OF THE DATA OBTAINED BY PHYSICAL  
MEASUREMENTS, SURVIVABILITY OF PERSONNEL REMAINING AT  
THE SELECTED TEST LOCATIONS IN THE LAUNCH AREA DURING  
MISSILE LAUNCH WOULD BE 100%. HOWEVER, THEY MAY  
EXPERIENCE BOTH TEMPORARY AND PERMANENT EAR DAMAGE.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 287 810

BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

STUDIES OF TEMPORARY THRESHOLD SHIFT CAUSED BY HIGH  
INTENSITY ACOUSTIC TRANSIENTS (U)

AUG 62 IV CARTER, NORMAN L.; KRYTER, KARL D.;  
REPT. NO. 949  
CONTRACT: DA49 007MD985

UNCLASSIFIED REPORT

DESCRIPTORS: •DEAFNESS, •EAR, •FATIGUE (PHYSIOLOGY),  
•HEARING, •PSYCHOACOUSTICS, •THRESHOLDS (PHYSIOLOGY),  
INTENSITY, NOISE (U)

EXPERIMENTS ARE DESCRIBED WHICH PROVIDE DATA ON THE RELATIONS BETWEEN NUMBER AND SOUND PRESSURE LEVEL OF ACOUSTIC IMPULSES AS A FUNCTION OF THE SUSCEPTIBILITY OF DIFFERENT PEOPLE TO AUDITORY FATIGUE. THIS INFORMATION PLUS PREVIOUSLY OBTAINED DATA ON THE EFFECTS OF PULSE REPETITION RATE AND THE RESULTS OF PLANNED EXPERIMENTS ON THE EFFECTS OF RISE TIME SHOULD PROVIDE THE BASIS FOR ESTABLISHING A GENERAL DESCRIPTION OF THE EFFECTS OF GUN NOISE ON AUDITORY FATIGUE. THIS DESCRIPTION SHOULD PROVIDE THE MEANS FOR SPECIFYING THE NOISE CHARACTERISTICS OF WEAPONS AND OPERATIONAL PROCEDURES FOR THEIR USE WITH RESPECT TO PROTECTION OF THE HEARING OF MILITARY PERSONNEL. THE GREAT VARIABILITY IN THE SUSCEPTIBILITY OF DIFFERENT PERSONS TO IMPULSES, PROBABLY DUE TO VARIATIONS IN THE BEHAVIOR OF THE AUDITORY REFLEX, SUGGESTS THAT DAMAGE RISK CRITERIA FOR IMPULSE NOISE MUST BE DESIGNED TO PROTECT THOSE PERSONS WITH EARS FAR MORE SENSITIVE THAN THOSE POSSESSED BY THE AVERAGE PERSON. INDIVIDUAL DIFFERENCES IN SUSCEPTIBILITY TO AUDITORY FATIGUE ARE MUCH GREATER FOR IMPULSE THAN FOR STEADY STATE NOISE. ONE OF THE EXPERIMENTS CONDUCTED REVEALED THAT PERSONS SUSCEPTIBLE TO AUDITORY FATIGUE FROM IMPULSE NOISE WERE NOT NECESSARILY MORE OR LESS SUSCEPTIBLE TO STEADY STATE NOISE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 293 875

LOVELACE FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH  
ALBUQUERQUE N MEX

A TENTATIVE ESTIMATION OF MANS TOLERANCE TO  
OVERPRESSURES FROM AIR BLAST

(U)

NOV 62 1V RICHMOND, DONALD R.; WHITE, CLAYTON S.;  
REPT. NO. 1335  
CONTRACT: DA49 146XZ55  
MONITOR: DASA 1335

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRBURST, BLAST, EFFECTIVENESS, HAZARDS,  
PATHOLOGY, PHYSIOLOGY, PRESSURE, SURVIVAL (PERSONNEL) (U)

TENTATIVE ESTIMATES OF THE SHARP-RISING  
OVERPRESSURES AS A FUNCTION OF DURATION WHICH  
REPRESENT A LETHAL HAZARD TO THE 70-KG ANIMAL 1, 50  
AND 99 PER CENT OF THE TIME WERE PRESENTED. THE  
PREDICTIONS WERE BASED ON INTERSPECIES CORRELATIONS  
AND EXTRAPOLATIONS ENCOMPASSING BLAST-TOLERANCE DATA  
FOR SIX MAMMALIAN SPECIES. THE TENTATIVE  
APPLICATION OF THE DATA TO INDICATE HUMAN BLAST  
TOLERANCE WAS DISCUSSED AND RELEVANT UNCERTAINTIES IN  
THE ESTIMATES WERE EMPHASIZED. IT WAS ALSO POINTED  
OUT THAT BIOLOGIC TOLERANCE WOULD BE DIFFERENT FOR  
AIR-BLAST PULSES HAVING NON-IDEAL WAVE FORMS  
FREQUENTLY ASSOCIATED WITH VARIOUS GEOMETRIES OF  
EXPOSURE. SELECTED PATHOPHYSIOLOGICAL INFORMATION  
PERTINENT TO THE BIOLOGICAL RESPONSE FOLLOWING BLAST  
EXPOSURE WAS GIVEN; NAMELY SURVIVAL TIME AND SELECTED  
POSTSHOT OBSERVATIONS OF DOGS AND GOATS.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 294 582  
TEXAS UNIV AUSTIN

EFFECT OF CERTAIN NOISES UPON DETECTION OF VISUAL  
SIGNALS (U)

JAN 63 IV WATKINS, WILLIAM H.;

UNCLASSIFIED REPORT

DESCRIPTORS: •NOISE, •PSYCHOACOUSTICS, •VISUAL SIGNALS,  
DETECTION, PERCEPTION, STIMULATION(PHYSIOLOGY), VISION,  
VISUAL ACUITY (U)

EFFECT OF CERTAIN NOISES UPON DETECTION OF VISUAL SIGNALS.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 297 866

NAVAL MISSILE CENTER POINT MUGU CALIF

METHODS FOR ESTABLISHING NOISE LEVELS AT VARIOUS  
DISTANCES FROM A MISSILE FIRING AND EFFECTS OF THESE  
NOISE LEVELS ON STRUCTURES, EQUIPMENT, AND  
PERSONNEL

(U)

AUG 60 1V OVERTON, J.B. ;  
REPT. NO. TM60 33

UNCLASSIFIED REPORT

DESCRIPTORS: •LAUNCHING, •ROCKET ENGINE NOISE, •SOUND,  
ACOUSTICS, GUIDED MISSILES, HAZARDS, LAUNCHING SITES,  
PERSONNEL, PRESSURE, RADIATION EFFECTS, SAFETY,  
STRUCTURES

(U)

METHODS FOR ESTABLISHING NOISE LEVELS AT VARIOUS DISTANCES  
FROM A MISSILE FIRING AND EFFECTS OF THESE NOISE  
LEVELS ON STRUCTURES, EQUIPMENT AND PERSONNEL.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 403 009

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

SOME FACTORS INFLUENCING THE EFFECTIVE AUDITORY  
INTENSIVE DIFFERENCE LIMEN,

(U)

APR 63 20P LOEB, MICHEL ; BINFORD, JOHN

R.;

REPT. NO. USAMRL-563

PROJ: DA-3-A-012001-B-801

MONITOR: AMRL 563

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: IN COOPERATION WITH UNIVERSITY OF  
LOUISVILLE, KENTUCKY.

DESCRIPTORS: •HEARING, •NOISE, DETECTION, PSYCHOLOGY,  
ATTENTION, STIMULATION(PHYSIOLOGY), ERRORS. (U)

RESEARCH WAS UNDERTAKEN TO DETERMINE PROBABILITY OF  
DETECTION OF CHANGES IN A STEADY NOISE STIMULUS AND  
PROBABILITY OF DETECTION OF LOUDER NOISE PULSES IN A  
TRAIN OF PULSES UNDER UN ALERTED CONDITIONS OVER  
APPRECIABLE PERIODS OF TIME AT DIFFERENT LEVELS OF  
DISCRIMINATION DIFFICULTY. CHANGES IN A STEADY  
STIMULUS WERE MORE READILY DETECTED THAN CHANGES IN  
PULSES. AT INTERMEDIATE DIFFICULTY LEVELS  
DETECTIONS OF CHANGES IN THE STEADY STIMULUS DECLINED  
WITH TIME; AT INTERMEDIATE AND DIFFICULT LEVELS  
DETECTION OF LOUDER PULSES DECLINED WITH TIME.  
PROGRESSIVE INCREASES IN LATENCY WERE NOTED IN SOME  
CASES, AND THERE WAS A GENERAL TENDENCY FOR FALSE  
DETECTIONS TO DECLINE WITH TIME ON TASK.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 403 010

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

TEMPORARY THRESHOLD SHIFT FOR 'NORMAL'  
SUBJECTS AS A FUNCTION OF AGE AND SEX,

(U)

MAY 63

9P

LOEB, MICHEL ; FLETCHER, JOHN

L. ;

REPT. NO. USAMRL-567

PROJ: DA-3-A-012001-A-800

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*HEARING,  
\*THRESHOLDS(PHYSIOLOGY), \*THRESHOLDS(PHYSIOLOGY),  
AGING(PHYSIOLOGY), AGING(PHYSIOLOGY), NOISE, NOISE, SEX,  
SEX, THRESHOLDS(PHYSIOLOGY), THRESHOLDS(PHYSIOLOGY) (U)  
IDENTIFIERS: DECIBELS, TEMPORARY THRESHOLD SHIFTS (U)

RESEARCH WAS PERFORMED TO DETERMINE WHETHER THERE ARE VARIATIONS IN TEMPORARY THRESHOLD SHIFT (TTS) FOR NORMAL INDIVIDUALS EXPOSED TO INTENSE (110 DB), BROAD BAND (1200-2400 CPS) NOISE AS A FUNCTION OF AGE AND SEX. AT 2,000 CPS THERE WAS CONSIDERABLY LESS TTS FOR MALES THAN FOR FEMALES. AT 4,000 CPS NO SUCH DIFFERENCES WERE OBSERVED. THE SMALLEST DIFFERENCE IN TTS FOR MEN AND WOMEN WAS OBSERVED FOR SUBJECTS UNDER 30. THE SIGNIFICANT DIFFERENCES MAY HAVE INDICATED THAT SUSCEPTIBLE MALES MORE FREQUENTLY SUSTAIN A PERMANENT LOSS AND SO WOULD BE IN ELIGIBLE AS SUBJECTS FOR THIS KIND OF EXPERIMENT. THERE IS NO SUPPORT FROM THESE DATA FOR THE HYPOTHESIS THAT MALES ARE BIOLOGICALLY MORE SUSCEPTIBLE TO HEARING LOSS THAN FEMALES.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 407 119  
TUFTS UNIV MEDFORD MASS

TRADING RELATIONS BETWEEN DICHOTIC TIME AND  
INTENSITY DIFFERENCES IN AUDITORY LOCALIZATION, (U)

63 7P FREEDMAN, SANFORD J.; PFAFF,  
DONALD W.;  
CONTRACT: AF AFOSR61 26  
MONITOR: AFOSR 1711

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPRINT FROM THE JOURNAL OF  
AUDITORY RESEARCH, 2, PP. 311-318, 1962.

DESCRIPTORS: \*NOISE, \*STIMULATION(PHYSIOLOGY),  
\*EXPOSURE(PHYSIOLOGY), \*HEARING, TIME, INTENSITY,  
AUDIOMETRY. (U)

BALANCING DICHOTIC INTENSITY IN ORDER TO CENTER A  
CLICK, AFTER VARIOUS DICHOTIC TIME DIFFERENCES HAD  
BEEN ESTABLISHED, YIELDED AN AVERAGE VALUE OF 43  
MICROSEC/DB FOR FOUR SUBJECTS. THE SAME FOUR  
SUBJECTS GAVE AN AVERAGE OF ONLY 23 MICROSEC/DB WHEN  
DICHOTIC TIME DIFFERENCES WERE VARIED TO CENTER THE  
SOUND, AS A FUNCTION OF PRESET DICHOTIC INTENSITY  
DIFFERENCES. ALICATION OF THIS DISPARITY FOR THE  
LOCALIZATION MECHANISMS EMPLOYING DICHOTIC TIME AND  
DICHOTIC INTENSITY DIFFERENCES IS DISCUSSED.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 408 004

MASSACHUSETTS MENTAL HEALTH CENTER BOSTON

THE EFFECT OF DICHOTIC NOISE ON AUDITORY  
LOCALIZATION,

(U)

63

SP

FREEDMAN, SANFORD J.; PFAFF,

DONALD W.;

CONTRACT: AF 33(616)-7625

PROJ: 9778 03

MONITOR: AFOSR

J347

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPRINT FROM THE JNL. OF  
AUDITORY RESEARCH, VOL. 2, PP. 305-310, 1962.  
(COPIES SUPPLIED BY DDC)

DESCRIPTORS: (•NOISE, STIMULATION(PHYSIOLOGY)), EAR,  
GENERATORS, EXPOSURE(PHYSIOLOGY), PERFORMANCE(HUMAN),  
ANALY, BRAIN, NERVOUS SYSTEM. (U)  
IDENTIFIERS: DICHOTIC NOISE, LOCALIZATION (U)

EFFECT OF DICHOTIC NOISE ON AUDITORY LOCALIZATION;  
AMBULATORY SUBJECTS; ABILITY TO DISCRIMINATE SMALL TIME  
DIFFERENCES BETWEEN THE TWO EAR WAS SIGNIFICANTLY IMPAIRED.



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 413 817

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

CHANGES IN THE HEARING OF PERSONNEL EXPOSED TO HIGH  
INTENSITY CONTINUOUS NOISE, (U)

MAY 63 9P LOEB, M. ; FLETCHER, J. L. ;  
REPT. NO. USAMRL-566  
PROJ: DA-3-A-012001-A-800

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•NOISE, THRESHOLDS), HEARING, PERSONNEL,  
EXPOSURE (PHYSIOLOGY), MEASUREMENT, STATISTICAL ANALYSIS,  
PHYSIOLOGY (U)

THE CHARACTERISTICS OF THE TEMPORARY AND PERMANENT  
THRESHOLD SHIFTS OF PERSONNEL ACUTELY EXPOSED TO A  
HIGH INTENSITY NOISE, AND TO RELATE NOISE EXPOSURE TO  
OBSERVED HEARING LOSS WERE PRESENTED. THE  
CORRELATIONS OBTAINED BETWEEN NOISE EXPOSURE, AS  
EVALUATED BY THE AUTHORS, AND HEARING LOSS, AS  
DETERMINED BY POST-EXPOSURE AUDIOMETRY, WERE NOT OF  
STATISTICAL SIGNIFICANCE. THE CORRELATION BETWEEN  
REFERENCE THRESHOLD AND INITIAL SHIFT WERE NEGATIVE  
AND STATISTICALLY SIGNIFICANT, AS WAS THE CORRELATION  
BETWEEN REFERENCE THRESHOLD AND PERMANENT LOSS.  
THE CORRELATION BETWEEN INITIAL SHIFT AND PERMANENT  
LOSS WAS POSITIVE AND SIGNIFICANT. UNRELIABILITY  
OF REPORTS BY THOSE EXPOSED REGARDING DETAILS OF  
EXPOSURE AND INDIVIDUAL DIFFERENCES IN SUSCEPTIBILITY  
TO NOISE INDUCED HEARING LOSS MIGHT ACCOUNT FOR THE  
LACK OF CORRELATION BETWEEN NOISE EXPOSURE AND  
HEARING LOSS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 415 302

SYRACUSE UNIV N Y BIOACOUSTICS LAB

TEMPORAL SUMMATION FOR TONES IN NARROW-BAND NOISE,

(U)

DEC 62

9P

WRIGHT, H. N. ; ZWICKER, E. ;

UNCLASSIFIED REPORT

REPRINT FROM THE JNL. OF THE ACOUSTICAL SOCIETY  
OF AMERICA, 35:5, PP. 691-699, MAY 1963. (COPIES NOT  
SUPPLIED BY DDC)

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*AUDIOMETRY), (\*ACOUSTICS), SOUND, NOISE,  
AUDIO FREQUENCY, STIMULATION (PHYSIOLOGY) (U)  
IDENTIFIERS: TEMPORAL SUMMATION (U)

A REPRINT ON TEMPORAL SUMMATION FOR TONES IN NARROW-BAND  
NOISE.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 415 672

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

COMBINED EFFECT OF VIBRATION AND NOISE ON THE HUMAN ORGANISM, (U)

APR 63 7P ARKADYEVSKIY, A.A.;  
MONITOR: FTD TT63 292

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM GIGIYENA I SANITARIYA,  
NO. 10, PP. 25-28, 1962.

DESCRIPTORS: (•BRAIN, VIBRATION), (•NOISE, BRAIN),  
(•SPINAL CORD, NOISE), (•VIBRATION, SPINAL CORD),  
PHYSIOLOGY, MEDIUM FREQUENCY, ELECTROCARDIOGRAPHY,  
AUDIOMETRY, MOTOR (U)

INDIVIDUAL EFFECT OF NOISE OF MEDIUM FREQUENCY  
SPECTRUM WITH AN INTENSITY OF 85 DB AND GENERAL  
VIBRATION OF A FREQUENCY OF 50 C AND AMPLITUDE OF 15  
MICRONS CAUSES NO EXPRESSED DISPLACEMENT IN  
PHYSIOLOGICAL REACTIONS. COMBINED EFFECT OF THESE  
FACTORS OF VERY SAME PARAMETERS INTENSIFY THE  
PHYSIOLOGICAL DISPLACEMENT OF THE INVESTIGATED  
FUNCTIONS, BUT THIS DISPLACEMENT DOES NOT GO BEYOND  
THE LIMITS OF NORMAL ORGANISMAL ADAPTATION.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 429 966

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

APPARENT CHANGE OF REPETITIVE NOISE BURSTS, (U)

OCT 63 13P ELLIOTT, LOIS L. ;

REPT. NO. SAM-TDR-63-72

PROJ: AF-7755

TASK: 775503

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*NOISE, ILLUSIONS), (\*ILLUSIONS, NOISE),  
NEUROLOGY, PHYSIOLOGY, AUDITORY NERVE, ANALYSIS,  
HEARING, THEORY, PSYCHIATRY (U)

NOISE BURSTS WHICH ARE PRESENTED AT CONSTANT, SLOW  
FLUTTER RATES THROUGH WIDE-RANGE EARPHONES APPEAR TO  
CHANGE IN RATE AND LOUDNESS. THIS ILLUSION IS  
DISCUSSED IN TERMS OF NEUROPHYSIOLOGIC EVIDENCE AND  
AUDITORY THEORY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 431 851

TUFTS UNIV MEDFORD MASS INST FOR PSYCHOLOGICAL  
RESEARCH

EFFECTS OF PROLONGED UNUSUAL STIMULUS CONDITIONS ON  
PERCEPTUAL DISCRIMINATION AND PERCEPTUAL MOTOR  
PERFORMANCE. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

JAN 64 9P FREEDMAN, SANFORD J. ;

CONTRACT: AF AFOSR53 63

MONITOR: AFOSR 64 0197

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*PERCEPTION, AUDIOMETRY), (\*MOTOR  
REACTIONS, STIMULATION(PHYSIOLOGY)), NOISE, MOTION,  
HEAD(ANATOMY), ERRORS, PERFORMANCE(HUMAN), VISION,  
HEARING, ADAPTATION (PHYSIOLOGY), EYE, MEASUREMENT (U)  
IDENTIFIERS: DICHOTIC NOISE, MOTOR REACTIONS,  
SKILLS (U)

EFFECTS OF PROLONGED UNUSUAL STIMULUS CONDITIONS ON  
PERCEPTUAL DISCRIMINATION AND PERCEPTUAL MOTOR PERFORMANCE.



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 432 087

ARMY PERSONNEL RESEARCH OFFICE WASHINGTON D C

INDIVIDUAL DIFFERENCES IN TRANSCRIBING VOICE RADIO  
MESSAGES EMBEDDED IN ATMOSPHERIC NOISE, (U)

DESCRIPTIVE NOTE: TECHNICAL RESEARCH NOTE,  
OCT 63 18P CASTELNOVO, A. E. ;TIEDEMANN,  
J. G. ;SKORDAHL, D. M. ;  
REPT. NO. APRO-TRN-137  
PROJ: DA-2-J-024701-A-713

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*PERSONNEL MANAGEMENT, COMMUNICATION AND  
RADIO SYSTEMS), (\*COMMUNICATION AND RADIO SYSTEMS,  
OPERATORS (PERSONNEL)), (\*HUMAN FACTORS ENGINEERING,  
VOICE COMMUNICATIONS), INTELLIGIBILITY, JOB ANALYSIS,  
MONITORS, NOISE, ATMOSPHERES, PERFORMANCE(HUMAN),  
ARMY (U)

IDENTIFIERS: ATMOSPHERIC NOISE, NOISE-MASKED  
MESSAGES (U)

THE MONITOR PERFORMANCE TASK HAS AS AN  
ONGOING OBJECTIVE THE ACCOMPLISHMENT OF RESEARCH TO  
MEET A REQUIREMENT OF THE U. S. ARMY SECURITY  
AGENCY FOR IMPROVEMENT OF WORK METHODS IN SEVERAL  
CRITICAL HUMAN FACTORS AREAS IN THE ARMY'S MONITOR  
SYSTEM. THE PRESENT PUBLICATION REPORTS ON ONE  
SEGMENT OF THIS RESEARCH EFFORT WHICH DEALS WITH  
VOICE RADIO MESSAGES EMBEDDED IN ATMOSPHERIC NOISE.  
THE STUDY WAS CONDUCTED TO EXPLORE THE QUESTION OF  
WHETHER INDIVIDUALS SHOW CONSISTENT DIFFERENCES IN  
ACCURACY OF TRANSCRIPTION AND WHETHER ANY SUCH  
DIFFERENCES ARE PREDICTABLE BY CONVENTIONAL MEASURES.  
VOICE-RADIO TRANSCRIBER PERFORMANCE UNDER LOW,  
MEDIUM, AND HIGH LEVELS OF ATMOSPHERIC NOISE IS  
ANALYZED. PREDICTION OF PERFORMANCE BY ARMY  
CLASSIFICATION BATTERY TESTS AND EFFECT OF  
INTRODUCTION OF ERRORS INTO TRANSCRIPT ARE EXAMINED.  
PRONOUNCED INDIVIDUAL DIFFERENCES IN TRANSCRIPTION  
WERE FOUND, BUT DIFFERENCES WERE STABLE OVER TIME AND  
ACROSS A BROAD RANGE OF NOISE INTENSITY. FINDINGS  
SUGGEST THE PRACTICALITY OF THE USE OF A JOB SAMPLE  
PERFORMANCE MEASURE AND STANDARDIZED SETS OF NOISE-  
MASKED MESSAGES AS AN APPROACH TO THE SELECTION  
PROBLEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 432 088

ARMY PERSONNEL RESEARCH OFFICE WASHINGTON D C

PERFORMANCE OF SINGLE VS MULTIPLE VOICE RADIO  
TRANSCRIBERS WORKING UNDER THREE SPEECH TO NOISE  
RATIOS, (U)

DESCRIPTIVE NOTE: TECHNICAL RESEARCH NOTE,  
SEP 63 33P CASTELNOVO, A. E. ;TIEDEMANN,  
J. G. ;DOBBINS, D. A.;  
REPT. NO. APRO-TRN-135  
PROJ: DA-2-J-024701-A-713

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*HUMAN FACTORS ENGINEERING, VOICE  
COMMUNICATIONS), (\*OPERATORS (PERSONNEL),  
PERFORMANCE(HUMAN)), (\*SPEECH, NOISE (RADIO)), MONITORS,  
ARMY, TEST METHODS, NOISE, ERRORS (U)  
IDENTIFIERS: NOISE (U)

EFFORT TO IMPROVE WORK METHODS EMPLOYED IN THE  
ARMY'S MONITOR SYSTEMS IS CRITICAL TO THE  
ASSESSMENT OF HUMAN PERFORMANCE WITHIN THE SYSTEM AND  
TO THE DETERMINATION OF SYSTEM RELIABILITY. THE  
PRESENT STUDY REPORTS ON ONE SEGMENT OF THE RESEARCH  
EFFORT--IMPROVEMENT OF WORK METHODS EMPLOYED IN  
PRODUCING A TRANSCRIPT. THREE WORK METHODS,  
DIFFERING IN THE NUMBER OF TRANSCRIBERS CONTRIBUTING  
TO THE FINAL PRODUCT, WERE COMPARED WITH RESPECT TO  
ACCURACY AND COMPLETENESS OF THE RESULTING  
TRANSCRIPTION. THESE METHODS (INVOLVING ONE, TWO  
OR THREE TRANSCRIBERS) WERE TESTED UNDER THREE  
LEVELS OF NOISE WHICH YIELDED HIGH, MEDIUM, AND LOW  
INTELLIGIBILITY UNDER STANDARD CONDITIONS. DATA  
OBTAINED WERE INTERPRETED BY ANALYSIS OF VARIANCE  
TECHNIQUE. A SMALL BUT CONSISTENT DIFFERENCE IN  
FAVOR OF MULTIPLE TRANSCRIBER WORK METHODS WAS FOUND  
TO EXIST. DIFFERENCES WERE STATISTICALLY  
SIGNIFICANT ONLY AT THE MEDIUM NOISE LEVEL. A  
SECONDARY FINDING OF POTENTIAL VALUE WAS THAT  
REPEATED EXPOSURES TO A MESSAGE RESULTED IN SOME  
INCREASE IN ACCURACY AT LOW AND MEDIUM NOISE LEVELS;  
REPEATED EXPOSURES AT THE HIGH NOISE LEVEL WERE  
CONDUCTIVE TO ERROR. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDM07

AD- 440 204

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

TEMPORARY THRESHOLD SHIFT IN SUCCESSIVE SESSIONS FOR  
SUBJECTS EXPOSED TO CONTINUOUS AND PERIODIC  
INTERMITTENT NOISE, (U)

MAR 64 8P LOEB, MICHEL ; FLETCHER, JOHN

L. I

REPT. NO. USAMRL-604

PROJ: DA-3-A-012001-B-801

MONITOR: AMRL 604

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON BASIC RESEARCH IN  
PSYCHOLOGICAL AND SOCIAL SCIENCES.

DESCRIPTORS: (\*THRESHOLD (PHYSIOLOGY), NOISE), (\*NOISE,  
THRESHOLD (PHYSIOLOGY)), (\*REACTION, NOISE), ACOUSTICS,  
SOCIAL SCIENCE, MEASUREMENT, AUDIOMETRY, HEARING, MALES,  
F MALES, CONDITIONED RESPONSE (U)

THIS STUDY SOUGHT TO DETERMINE WHETHER TEMPORARY  
THRESHOLD SHIFT (TTS) FOLLOWING EXPOSURE TO  
CONTINUOUS OR PERIODIC INTERMITTENT NOISE CHANGES AS  
A FUNCTION OF REPETITIVE EXPOSURE (FIVE SUCCESSIVE  
SESSIONS). SIGNAFIGANTLY LESS TTS WAS OBSERVED  
FOLLOWING EXPOSURE TO INTERMITTENT NOISE IN LATER  
SESSIONS FOR BOTH MEN AND WOMEN. NO SUCH EFFECT  
WAS NOTED FOR CONTINUOUS NOISE AS A FUNCTION OF  
REPETITIVE EXPOSURE. THESE FINDINGS AND SOME  
EARLIER ONES REPORTED BY COLES SUGGEST THAT  
TEMPORAL CONDITION OF THE ACOUSTIC REFLEX MAY BE AN  
OPERATION FACTOR. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 449 417

HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

DEVELOPMENT OF A ROCKET-BLAST SIMULATOR: DESIGN AND TEST.

(U)

DESCRIPTIVE NOTE: REPT. FOR NOV 62-FEB 63,  
FEB 64 68P SPELLMAN, EDEL A. ;  
REPT. NO. TM4 64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•ROCKET LAUNCHING, BLAST), (•EXHAUST GASES, HAZARDS), (•ROCKET LAUNCHERS, HUMANS), SIMULATORS, DESIGN, MILITARY PERSONNEL, STRESSES, SAFETY, CAPTIVE TESTS, WEIGHT, PRESSURE, PERFORMANCE (ENGINEERING), VALVES, DIAPHRAGMS (MECHANICS), TESTS (U)

THIS REPORT DESCRIBES THE ENGINEERING DESIGN, DEVELOPMENT, AND TESTING OF A FACILITY USED TO SIMULATE THE EFFECTS OF ROCKET BLAST UPON MILITARY PERSONNEL. THE MOST FORMIDABLE PROBLEMS ENCOUNTERED WERE (1) THE NECESSITY OF ACHIEVING A HIGH-ORDER RELIABILITY TO ASSURE SAFETY, AND (2) THE REQUIREMENTS FOR A TOTAL PRESSURE RISE WITHIN FIVE MILLISECONDS TO ACHIEVE HIGH BLAST IMPULSE. BOTH OF THESE PROBLEMS WERE RESOLVED THROUGH THE DESIGN OF A NOVEL SIDE-MOUNTED VALVE ACTUATED BY A SUDDEN PRESSURE DIFFERENTIAL RESULTING FROM THE BURSTING OF A PRESSURIZED DIAPHRAGM. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 455 002

ARMY MEDICAL RESEARCH LAB FORT KNOX KY

EFFECTS OF HIGH INTENSITY IMPULSE NOISE AND RAPID  
CHANGES IN PRESSURE UPON STAPEDECTOMIZED MONKEYS, (U)

AUG 64 11P FLETCHER, JOHN L. ; ROBERSON,  
GEORGE D. ; LOEB, MICHEL ;  
REPT. NO. USAMRL-610  
PROJ: DA-3-A-012001-A-800  
TASK: 3-A-012001-A-80001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON MILITARY  
PSYCHOPHYSIOLOGICAL STUDIES.

DESCRIPTORS: (•HEARING, NOISE), BONES, EAR, PROSTHETICS,  
AUDITORY ACUITY, EFFECTIVENESS, BLAST, SHOCK WAVES,  
PRESSURE, ALTITUDE CHAMBERS, PSYCHOPHYSIOLOGY, SURGICAL  
TECHNIQUES, MONKEYS, PERFORMANCE (ENGINEERING),  
SOUND (U)  
IDENTIFIERS: MIDDLE EAR, OTOSCLEROSIS (U)

IN ORDER TO DETERMINE THE EFFECTS OF IMPULSE NOISE  
AND RAPID CHANGES IN PRESSURE UPON STAPEDECTOMIZED  
PATIENTS, 40 CEBUS MONKEYS WERE SUBJECTED TO THE  
STAPEDECTOMY PROCEDURE AND LATER EXPOSED TO GUNFIRE  
OR RAPID CHANGES IN PRESSURE IN AN ALTITUDE CHAMBER.  
TWO DIFFERENT PROSTHESES WERE USED, HALF THE  
MONKEYS RECEIVING THE POLYETHYLENE STRUT AND VEIN  
GRAFT, THE OTHER HALF GETTING A STAINLESS STEEL  
PISTON PROSTHESIS. IMMEDIATE POST-EXPOSURE  
EXAMINATION OF THE MONKEYS WAS MADE BY REFLECTING THE  
DRUMS. NO EXPERIMENTAL DISARTICULATION OF THE  
PROSTHESES WAS OBSERVED, NOR WERE THERE ANY  
BEHAVIORAL MANIFESTATIONS OF VESTIBULAR PATHOLOGY.  
NO SIGNIFICANT DIFFERENCES WERE OBSERVED BETWEEN  
THE TWO DIFFERENT PROSTHESES USED. ON THE BASIS OF  
THIS EXPERIMENT, NO VALID REASON FOR DRASTIC DUTY  
LIMITATION OF STAPEDECTOMIZED PATIENTS CAN BE SEEN.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 458 244

NRC COMMITTEE ON HEARING AND BIO-ACOUSTICS WASHINGTON D  
C

HAZARDOUS EXPOSURE TO INTERMITTENT AND STEADYSTATE  
NOISE, (U)

JAN 65 34P KRYTER, KARL D. ;  
CONTRACT: NONR230005

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SOUND, STRESS (PHYSIOLOGY)), (\*NOISE,  
STRESS (PHYSIOLOGY)), LUNAR ENGINEERING, AUDITORY  
PERCEPTION, AUDITORY ACUITY, HEARING, WOUNDS AND  
INJURIES, DEAFNESS, TOLERANCES (PHYSIOLOGY), DATA,  
TABLES(DATA), EXPOSURE(PHYSIOLOGY) (U)  
IDENTIFIERS: GRAPHS(CHARTS) (U)

THIS REPORT SPECIFIES DAMAGE RISK CRITERIA FOR  
EXPOSURE TO SOUND, AND CONTAINS GRAPHS OF MAXIMUM  
SOUND PRESSURE LEVELS AND DURATIONS OF EXPOSURES THAT  
ARE CONSIDERED TOLERABLE ALONG WITH EXAMPLES OF THE  
USE OF THESE GRAPHS. ALSO INCLUDED IS BACKGROUND  
INFORMATION AND A DISCUSSION OF THE RATIONALE,  
ASSUMPTIONS, LIMITATIONS, AND GENERAL PROBLEMS  
PERTINENT TO THE DEVELOPMENT AND APPLICATION OF  
DAMAGE RISK CRITERIA AND THE RELATED EXPOSURE  
CONTOURS. THIS REPORT IS INTENDED PRIMARILY FOR  
TECHNICAL PERSONS WORKING IN THIS PROBLEM AREA IN THE  
MILITARY SERVICES AND OTHER GOVERNMENT AGENCIES. NO  
ATTEMPT IS MADE TO INTERPRET OR SIMPLIFY THE REPORT  
OR PROCEDURES CONTAINED HEREIN FOR SPECIAL OR  
PARTICULAR OPERATIONAL SITUATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 467 132  
NAVAL WEAPONS LAB DAHLGREN VA

TERRIER STRUCTURAL FIRING TESTS ABOARD THE ITALIAN  
NAVAL SHIP ANDREA DORIA, (U)

JUN 65 IV LOVING, J. W. ; DODSON, T. I. ;  
SMITH, A. D. ; STEPHENS, J. C. ;  
REPT. NO. NWL-1982  
TASK: RMLG13 135 210 4F009 05 01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SURFACE TO AIR MISSILES, SHIPBOARD),  
LAUNCHING, CRUSIERS, TEMPERATURE, PRESSURE, FIRING  
TESTS(ORDNANCE), GUIDED MISSILE LAUNCHERS, NOISE,  
CONCRETE, GUIDE MISSILE WARHEADS, TESTS, GAS LEAKS,  
TOXICITY, EXHAUST GASES (U)  
IDENTIFIERS: TERRIER (U)

EIGHT TERRIER MARK 12 MOD 0 BOOSTERS WITH  
CONCRETE SLUGS WERE FIRED ABOARD THE ITALIAN  
NAVAL SHIP ANDREA DORIA TO INVESTIGATE THE  
ADEQUACY OF THE PROTECTION FOR THE TERRIER  
LAUNCHING SYSTEM PERSONNEL AGAINST BLAST EFFECTS AND  
TO DETERMINE THE EFFECTS OF THE BOOSTER EXHAUST ON  
THE SHIP'S STRUCTURE. DURING THE TEST SERIES,  
MEASUREMENTS OF TOXIC GAS LEAKAGE INTO PERSONNEL  
AREAS, SOUND PRESSURE LEVELS, AIR TEMPERATURES, AND  
EXHAUST STREAM PRESSURES WERE OBTAINED. THE  
RESULTS INDICATED NO MAJOR STRUCTURAL DEFICIENCIES.  
THERE WAS SOME GAS AND SMOKE LEAKAGE INTO PERSONNEL  
AREAS ADJACENT TO THE LAUNCHER, EXPOSURE OF EQUIPMENT  
AND ORDNANCE TO HIGH TEMPERATURES AND SUPERFICIAL  
STRUCTURAL DAMAGE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 468 342

CENTRAL INST FOR THE DEAF ST LOUIS MO

A MOBILE LABORATORY FOR GROUP HEARING TESTS.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

NOV 56 15P

COX, J. R. ; BENSON, R. W. ;

NIEMOELLER, A. F. ;

CONTRACT: NONR115102

PROJ: NR146 092

MONITOR: NAVMED

NM001-102-502-03

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*AUDIOMETRY, TRAILERS), (\*HEARING, TEST FACILITIES), DESIGN, CONSTRUCTION, ACOUSTICS, PERFORMANCE(ENGINEERING), NOISE, ACOUSTIC INSULATION, TEST METHODS

(U)

A MOBILE LABORATORY HAS BEEN CONSTRUCTED AS PART OF A NAVY PROGRAM TO INVESTIGATE BOTH THE AUDITORY AND THE NON-AUDITORY EFFECTS (IF ANY) OF THE NOISE EXPOSURE RECEIVED BY JET ENGINE MECHANICS AND MEMBERS OF THE FLIGHT DECK CREW ABOARD AIRCRAFT CARRIERS. THE CONSTRUCTION OF THE MOBILE LABORATORY WAS NECESSARY TO PERMIT THE MEASUREMENT OF AUDITORY THRESHOLDS AND PERFORMANCE ON CERTAIN PSYCHOMOTOR TESTS UNDER CONTROLLED ENVIRONMENTAL CONDITIONS. THE MOBILE LABORATORY HAS PROVED TO BE A USEFUL FACILITY FOR MAKING HEARING MEASUREMENTS IN THE FIELD. IT IS RELATIVELY EASY TO MOVE ABOUT AND THE DESIGN HAS, ON THE WHOLE, PROVED SATISFACTORY. SOME ADDITIONAL NOISE CONTROL WILL BE NECESSARY BEFORE THE ACOUSTICAL DESIGN IS COMPLETELY SATISFACTORY. THE GROUP AUDIOMETER IS CAPABLE OF MAKING COMPARISONS BETWEEN GROUPS OF MEN, AND BETWEEN BEFORE AND AFTER EXPOSURE TESTS TAKEN ON THE SAME GROUP OF MEN. THE AUDIOMETER IS SIMPLE, FAST, RELIABLE, AND NOT PARTICULARLY COSTLY. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 601 809

AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB  
OHIO

NOISE SURVEY OF AUXILIARY SUPPORT EQUIPMENT AT ONE  
ATLAS COMPLEX AND ONE TITAN I COMPLEX, CAPE KENNEDY  
MISSILE TEST ANNEX, ATLANTIC MISSILE RANGE. (U)

DESCRIPTIVE NOTE: REPT. FOR 8 NOV 61-31 AUG 62

APR 64 34P ENGLAND, ROBERT T. :

PROJ: 7231

TASK: 723104

MONITOR: AMRL

TDR64 31

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*NOISE, GROUND SUPPORT EQUIPMENT),  
(\*GROUND SUPPORT EQUIPMENT, LAUNCHING SITES), GUIDED  
MISSILES, SOUND PITCH, NARROWBAND, MEASUREMENT, HEARING,  
SPEECH, SAFETY, INSTRUMENTATION, EXPERIMENTAL DATE,  
BLOWERS, HYDRAULIC EQUIPMENT, COMPRESSORS, RECTIFIERS,  
PNEUMATIC DEVICES, AIR CONDITIONING EQUIPMENT,  
DEAFNESS (U)

NOISE LEVEL MEASUREMENTS WERE MADE ON SEVERAL ITEMS  
OF GROUND SUPPORT EQUIPMENT AT AN ATLAS COMPLEX AND  
TITAN I COMPLEX. OVERALL (FROM 18.7 TO 9600  
CPS) AND OCTAVE-BAND (9 OCTAVES WITHIN THE  
OVERALL RANGE) SOUND PRESSURE LEVELS MEASURED IN  
THE NEAR VICINITY OF THE EQUIPMENT ARE PRESENTED.  
ONE-THIRD OCTAVE-BAND SOUND PRESSURE LEVELS ARE  
ALSO GIVEN FOR CERTAIN EQUIPMENT WHICH GENERATES  
NARROW-BAND SOUND LEVELS. EXPOSURE TIME  
LIMITATIONS AND SPEECH INTERFERENCE LEVELS FOR  
INDIVIDUALS WORKING IN THE VICINITY OF THE EQUIPMENT  
ARE DISCUSSED. RECOMMENDATIONS ARE MADE FOR  
MEASURES TO BE TAKEN TO INSURE AGAINST HEARING LOSS  
AND TO IMPROVE THE AREAS FOR SPEECH EFFECTIVENESS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 602 265

HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

MAXIMUM ACCEPTABLE STEADY STATE NOISE LEVEL FOR ARMY  
MATERIEL COMMAND EQUIPMENT. (U)

JUN 64 8P CHAILLET, ROBERT F. ;  
REPT. NO. HEL-SI-63A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*NOISE, HUMAN FACTORS ENGINEERING),  
(\*HUMAN FACTORS ENGINEERING, ARMY EQUIPMENT), (\*ARMY  
EQUIPMENT, HUMAN FACTORS ENGINEERING), HEARING, DAMAGE,  
SOUND, ARMY PERSONNEL, STANDARDS (U)

THIS STANDARD ESTABLISHES THE MAXIMUM ACCEPTABLE  
STEADY STATE NOISE LEVEL PERMITTED AT PERSONNEL  
OCCUPIED SPACES OF EQUIPMENT DESIGNED, DEVELOPED OR  
PROCURED BY AMC. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 618 327

HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

PRELIMINARY STUDIES OF THE IMPULSE-NOISE EFFECTS ON  
HUMAN HEARING (PROJECT HUMIN). (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,

DEC 64 66P HODGE, DAVID C. ; GATES, HUGH

W. ; SODERHOLM, ROBERT B. ; HELM, CHARLES P. , JR. ;

BLACKMER, RAYMOND F. ;

REPT. NO. TM-15-64

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*AUDITORY ACUITY, NOISE), (\*NOISE,  
AUDITORY ACUITY), HUMAN FACTORS ENGINEERING, HEARING,  
AUDIOMETRY, THRESHOLDS (PHYSIOLOGY), BEHAVIOR,  
PERFORMANCE (HUMAN), REACTION (PSYCHOLOGY), AUTOMATIC  
WEAPONS, SMALL ARMS, AUDIO FREQUENCY, ARMY PERSONNEL (U)

THE REPORT SUMMARIZES THE ACCOMPLISHMENTS OF THE  
U. S. ARMY HUMAN ENGINEERING LABORATORIES  
IMPULSE NOISE PROGRAM (PROJECT HUMIN). AFTER  
REVIEWING PAST RESEARCH AND STATING THE RATIONALE FOR  
STUDYING HOW IMPULSE NOISE AFFECTS HUMAN SUBJECTS, IT  
GIVES DETAILED DESCRIPTIONS OF THE APPARATUS AND  
PROCEDURES WHICH HAVE BEEN DEVELOPED FOR THE PROGRAM.  
THE RESULTS OF FOUR PRELIMINARY IMPULSE-NOISE  
EXPERIMENTS WITH HUMAN SUBJECTS ARE PRESENTED AND  
DISCUSSED, TOGETHER WITH CERTAIN SPECIAL PROBLEMS  
WHICH HAVE ARISEN DURING THE CONDUCT OF THE PROGRAM.  
THE PROJECTED FUTURE COURSE OF THE PROJECT IS  
OUTLINED. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 619 407

SCHOOL OF AVIATION MEDICINE RANDOLPH AFB TEX

CENTRAL REPOSITORY FOR HEARING CONSERVATION DATA. AN  
EXAMINATION OF THE FIRST YEAR'S REPORTING, (U)

OCT 58 23P WALDRON, DARYLE L. ;  
REPT. NO. REVIEW-3-59

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON AEROMEDICAL REVIEWS.

DESCRIPTORS: (•NOISE, HEARING), (•AIR FORCE PERSONNEL,  
HEARING), (•HEARING, AIR FORCE PERSONNEL), AVIATION  
MEDICINE, AUDIOMETRY, THRESHOLDS(PHYSIOLOGY), JET ENGINE  
NOISE, AUDIO FREQUENCY, PATHOLOGY, DIAGNOSIS(MEDICINE),  
HAZARDS, REVIEWS (U)

AIR FORCE REGULATION 160-3, 'HAZARDOUS  
NOISE EXPOSURE,' HAS AS ITS PURPOSE THE  
ESTABLISHMENT OF A PROGRAM TO MINIMIZE THE  
UNDESIRABLE EFFECTS OF NOISE ON AIR FORCE  
PERSONNEL. SPECIFICALLY, THE REGULATORY SECTIONS  
OF AFR 160-3 REQUIRE THAT THE MEDICAL SERVICE:  
(1) IDENTIFY, DESIGNATE, AND MONITOR AREAS WHERE  
PERSONNEL ARE LIKELY TO BE EXPOSED TO HAZARDOUS NOISE  
LEVELS; (2) IDENTIFY THOSE WHO ARE ROUTINELY  
ASSIGNED TASKS IN THESE AREAS; (3) ESTABLISH A  
BASELINE OR REFERENCE AUDIOGRAM FOR EACH OF THESE  
INDIVIDUALS; (4) FIT, ISSUE, AND SUPERVISE THE  
USE OF PROTECTIVE EQUIPMENT; (5) SET UP AND  
CARRY OUT AN AUDIOMETRIC MONITORING PROGRAM AS A  
MEANS OF DETECTING THRESHOLD SHIFTS IN THE HEARING OF  
THOSE WHO HAVE A REFERENCE AUDIOGRAM; (6) SET  
UP AND MAINTAIN AN EDUCATION PROGRAM WHICH SUPPORTS  
THE OVER-ALL HEARING CONSERVATION GOAL; (7)  
ACCOMPLISH FORMS 1490 ('HEARING CONSERVATION  
DATA'), ONE COPY OF WHICH IS TO BE SENT TO THE  
CENTRAL REPOSITORY, SCHOOL OF AVIATION  
MEDICINE, USAF, RANDOLPH AIR FORCE BASE,  
TEXAS. THIS REPORT ATTEMPTS TO SUMMARIZE AND  
SHARE SOME OF THE INFORMATION GAINED FROM THE FIRST  
YEAR'S EXPERIENCE IN HANDLING AND EXAMINING THE  
FORMS 1490, AND IN COMMUNICATING WITH THOSE  
PERSONAL RESPONSIBLE FOR THEIR COMPLETION. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 620 259

OHIO STATE UNIV RESEARCH FOUNDATION COLUMBUS

SOME INFLUENCES OF DELAYED SIDE-TONE UPON  
INTELLIGIBILITY.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

JUL 52 11P ATKINSON, CHESTER J. ;

REPT. NO. 13

CONTRACT: N6ONR22525

PROJ: NR-142-993, NM-001-064.01.13

MONITOR: NAVMED , NM-001-064.01.13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH NAVAL  
SCHOOL OF AVIATION MEDICINE, PENSACOLA, FLA.

DESCRIPTORS: (•SPEECH, INTELLIGIBILITY),  
(•INTELLIGIBILITY, SPEECH), VOICE COMMUNICATIONS,  
HEARING, NOISE

(U)

GROUPS OF LISTENERS HEARD INTELLIGIBILITY TESTS IN  
NOISE AND IN QUIET. THE SPEAKERS READ WITH DELAYS  
OF .02 TO .09 SECOND INTRODUCED INTO THEIR SIDE-TONE.  
THE LISTENER HEARD EITHER THE ORIGINAL SAYING OR  
THE ORIGINAL PLUS THE DELAYED SAYING OF SPEECH  
MATERIAL. SPEECH WAS RECEIVED LESS ACCURATELY IN  
EVERY CONDITION EXCEPT WHEN THE SPEAKERS READ WITH A  
.05, .08 OR .09 SECOND DELAY IN THEIR SIDETONE.

CONCLUSIONS: (1) LISTENERS HEAR WORDS MORE  
ACCURATELY IF WORDS ARE RECEIVED ONLY AS AN ORIGINAL  
MESSAGE; SUPERIMPOSING AN ORIGINAL AND A DELAYED  
RENDITION OF A WORD RENDERS THE WORD LESS  
INTELLIGIBLE UNDER THE DELAY TIMES STUDIES; (2)  
THE DELAY OF .05 SECOND IN THE SIDE-TONE OF THE  
SPEAKER APPEARED TO AFFECT THE RECEPTION OF HIS  
SPEECH BENEFICIALLY; THE INTELLIGIBILITY SCORES FOR  
THIS CONDITION WERE SIGNIFICANTLY HIGHER THAN AT  
OTHER DELAY TIMES; (3) AN INTELLIGIBILITY  
INCREMENT SIMILAR TO BUT LESS THAN THAT OBSERVED FOR  
THE .05 SECOND DELAY WAS PRESENT FOR THE .08 AND .09  
SECOND DELAY OF SIDE-TONE; (4) THE EFFECTS OF  
THE DELAYED SIDE-TONE UPON THE INTELLIGIBILITY OF A  
SPEAKER BECAME EVIDENT IN A PERIOD OF LESS THAN TWO  
MINUTES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 620 263

NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA

A STUDY OF INTELLECTUAL ACTIVITY IN A NOISY  
ENVIRONMENT.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,

OCT 56 16P WILBANK, WILLIAM A. ;WEBB,

WILSE B. ;TOLHURST, GILBERT C.;

PROJ: NM-001-104-100

MONITOR: NAVMED , NM-001-104-100-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*NOISE, REACTION(PSYCHOLOGY)),  
(\*PERFORMANCE(HUMAN), NOISE), REASONING, APTITUDE TESTS,  
NAVAL PERSONNEL, TOLERANCES(PHYSIOLOGY), STATISTICAL  
ANALYSIS

(U)

FOUR TESTS FROM THE DIFFERENTIAL APTITUDE  
TESTS WERE GIVEN TO NAVAL AVIATION CADETS UNDER  
NORMAL TESTING CONDITIONS AND WITH A 100 DECIBEL  
BACKGROUND NOISE. SIGNIFICANTLY HIGHER SCORES WERE  
OBTAINED UNDER NOISE ON THE DAT CLERICAL SPEED  
AND ACCURACY TEST. THIS EFFECT COULD BE  
DEMONSTRATED ONLY WHEN ABILITY DIFFERENCES AMONG THE  
CADETS WERE CONTROLLED. IT WAS ALSO FOUND THAT  
INDIVIDUALS MAINTAIN THEIR RELATIVE POSITION WITHIN  
THE POPULATION IN BOTH NOISE AND QUIET. THE  
IMPLICATIONS FOR SELECTION ARE DISCUSSED.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 628 198 5/10 6/19  
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB  
OHIO

HUMAN PERFORMANCE AS A FUNCTION OF CHANGES IN  
ACOUSTIC NOISE LEVELS.

(U)

DESCRIPTIVE NOTE: FINAL REPT., JUN 64-FEB 65,  
DEC 65 20P SHOENBERGER, RICHARD W. ;  
HARRIS, CHARLES S. ;  
REPT. NO. AMRL-TR-65-165,  
PROJ: AF-1710,  
TASK: 171002,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*PERFORMANCE(HUMAN), NOISE), (\*NOISE,  
PERFORMANCE(HUMAN)), ACOUSTIC PROPERTIES, INTENSITY,  
ANALYSIS OF VARIANCE, LEARNING, PSYCHOMOTOR

(U)

PSYCHOMOTOR PERFORMANCE OF 16 SUBJECTS WAS  
EVALUATED UNDER FOUR NOISE CONDITIONS, DURING FOUR  
TEST SESSIONS, IN A LATIN SQUARE DESIGN. THREE  
EXPERIMENTAL CONDITIONS EACH BEGAN WITH DIFFERENT  
INTENSITIES OF NOISE (QUIET, 85 DB, OR 95 DB).  
AFTER 30 MINUTES EXPOSURE THE NOISE WAS CHANGED TO A  
FINAL HIGH INTENSITY LEVEL (110DB), WHICH LASTED  
FOR 15 MINUTES. THE FOURTH CONDITION SERVED AS A  
CONTROL, IN WHICH QUIET PREVAILED THROUGHOUT THE  
ENTIRE 45 MINUTE PERIOD. THE RESULTS PARTIALLY  
SUPPORTED THE HYPOTHESIS THAT GREATER CHANGES IN  
NOISE LEVELS PRODUCE GREATER DECREMENTS IN  
PERFORMANCE. THERE WAS, HOWEVER, A STRONG  
INTERACTION BETWEEN NOISE CONDITIONS AND SESSIONS.  
THE NATURE OF THIS INTERACTION INDICATED THAT THIS  
PHENOMENON DOES NOT OCCUR UNIFORMLY THROUGHOUT THE  
COURSE OF LEARNING, AND PROBABLY IS OF LESSER  
IMPORTANCE FOR WELL LEARNED TASKS. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 634 456 6/10 6/19  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

FURTHER STUDIES OF THE RELIABILITY OF TEMPORARY  
THRESHOLD SHIFT FROM IMPULSE-NOISE EXPOSURE. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
APR 66 46P HODGE, DAVID C. ;MCCOMMONS,  
R. BRUCE ;  
REPT. NO. TM-3-66,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*NOISE, \*THRESHOLDS(PHYSIOLOGY)),  
EXPOSURE(PHYSIOLOGY), RELIABILITY, HEARING, AUDIOMETRY,  
ARMY PERSONNEL (U)

THREE STUDIES WERE CONDUCTED TO DETERMINE THE  
RELIABILITY, UNDER VARIOUS EXPOSURE CONDITIONS, OF  
TEMPORARY THRESHOLD SHIFT (TTS) PRODUCED BY IMPULSE  
NOISE. THE SUBJECTS, WHO WERE REPRESENTATIVE OF  
THE ARMY POPULATION, WERE TESTED AT FREQUENCIES  
THROUGHOUT THE RANGE OF HUMAN HEARING. INDIVIDUAL  
SUBJECTS' TTSS WERE NOT CONSISTENT ENOUGH TO PERMIT  
ANY MEANINGFUL GENERALIZATIONS. HOWEVER, GROUP-  
MEAN TTS WAS A RELIABLE MEASURE OF IMPULSE-NOISE  
EFFECTS FOR SUBJECTS WITH BOTH NORMAL AND SUBNORMAL  
HEARING, AND THROUGHOUT THE RANGE OF AUDIBLE  
FREQUENCIES. BASING INTERPRETATIONS ON THESE TYPES  
OF DATA SHOULD INSURE THAT RESULTS FROM VARIOUS TESTS  
WILL BE COMPARABLE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 638 355 5/9 17/2  
PURDUE UNIV LAFAYETTE IND

AN EXPERIMENTAL COMPARISON OF 5 CONDITIONS FOR VOICE  
COMMUNICATION TRAINING. (U)

AUG 47 60P KELLY, J. C. ; MASON, HARRY M. ;  
REPT. NO. 4,  
CONTRACT: N60R1-104(02),  
PROJ: PRF-20-K-1,  
MONITOR: SPECDEV CEN 104-2-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SPEECH, TRAINING), (\*TRAINING DEVICES,  
SPEECH), (\*VOICE COMMUNICATIONS, TRAINING DEVICES),  
SPEECH TRANSMISSION, NOISE, AIRCRAFT NOISE,  
INTELLIGIBILITY (U)

FIVE GROUPS OF UNDERGRADUATE MEN WERE TRAINED TO INCREASE WORD-INTELLIGIBILITY UNDER DIFFICULT COMMUNICATION CONDITIONS, USING COURSE CONTENT FOUNDED ON EXPERIENCE GAINED DURING WORLD WAR II. EACH GROUP WAS TRAINED IN A SITUATION PRESENTING A DIFFERENT TYPE OR AMOUNT OF INTERFERENCE. EFFECTS OF TRAINING WERE EVALUATED BY WORD-INTELLIGIBILITY TESTS AND BY JUDGMENTS OF CONNECTED SPEECH. COMPARISON OF INCREASES IN WORD-INTELLIGIBILITY OF EXPERIMENTAL AND CONTROL SUBJECTS SHOWS THAT: (A) SUBJECTS WHICH PRACTICED UNDER THE MOST SEVERE NOISE CONDITION GAINED LEAST. THIS MOST SEVERE CONDITION WAS THE SAME AS THE TEST CONDITION USED TO EVALUATE TRAINING OF ALL GROUPS. (B) SUBJECTS TRAINED UNDER CONDITIONS OF NOISE 10VU LESS SEVERE, GAINED SLIGHTLY MORE THAN THOSE TRAINED UNDER MOST SEVERE NOISE. (C) SUBJECTS TRAINED UNDER A CONDITION PRESENTING A LESS INTENSE NOISE THAN USED IN (B) ABOVE, GAINED MORE THAN ANY OTHER GROUP. THE NOISE USED WITH THIS GROUP CONSISTED OF GARBLED SPEECH SIGNALS. (D) TWO PRACTICE CONDITIONS WHICH DID NOT EMPLOY AN INTERPHONE SYSTEM PRODUCED SLIGHTLY GREATER GAINS THAN THE SEVERE NOISE CONDITION, BUT LESS THAN THE CONDITION PRESENTING A REDUCED LEVEL OF AIRPLANE NOISE (B). (E) EXPERIMENTAL SUBJECTS GAINED SUBSTANTIALLY MORE THAN CONTROL SUBJECTS WHO WERE GIVEN THE SAME TESTS AFTER PRELIMINARY INDOCTRINATION IN USE OF EQUIPMENT. THE MOST SEVERE CONDITION WAS DESIGNED TO APPROXIMATE CONDITIONS WIDELY USED FOR TRAINING AIRCREW MEMBERS IN VOICE COMMUNICATION (U)

UNCLASSIFIED

/ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 639 103 17/2 5/10 6/10  
PURDUE UNIV LAFAYETTE IND

THE RELATION BETWEEN DURATION OF EXPOSURE TO HIGH  
LEVEL NOISE AND LISTENER ACCURACY. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.

DEC 54 19P SHAFFER, G. L. ; BILGER, R. C. ;  
HANLEY, T. D. ; STEER, M. D. ;  
CONTRACT: N60R1-104(02),  
PROJ: 20-F-8,  
MONITOR: SPECDEV CEN 104-2-38

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (\*SPEECH, \*INTELLIGIBILITY), (\*NOISE,  
HEARING), (\*HEARING, PERFORMANCE(HUMAN)),  
EXPOSURE(PHYSIOLOGY), VOICE COMMUNICATIONS,  
TOLERANCES(PHYSIOLOGY), AUDITORY ACUITY (U)

THE EXPERIMENT WAS DESIGNED TO DISCOVER WHETHER  
NOISE EXPOSURE RESULTS IN IMPAIRED LISTENING ABILITY  
IN A SITUATION IN WHICH THE INDIVIDUAL REMAINS IN THE  
NOISE ENVIRONMENT AND THE LISTENING TEST STIMULI ARE  
PRESENTED AT A CONSTANT LEVEL WITH RESPECT TO THE  
NOISE LEVEL. FOR THIS PURPOSE, FOUR LISTENING-  
IN-NOISE TESTS WERE ADMINISTERED TO AN EXPERIMENTAL  
AND A CONTROL GROUP. BETWEEN TESTS, THE  
EXPERIMENTAL SUBJECTS REMOVED THEIR HEADPHONES IN THE  
PRESENCE OF THE TEST NOISE; THE CONTROL SUBJECTS  
REMOVED THEIR HEADPHONES WHEN THE TESTING NOISE WAS  
CUT OFF AND SPENT THE INTERVAL BETWEEN TESTS IN  
QUIET. WITHIN BOTH GROUPS, SUBJECTS WERE EXPOSED  
TO NOISE AND TESTED OVER A FIFTY-MINUTE PERIOD WHILE  
OTHERS WERE TESTED OVER A PERIOD OF THREE HOURS AND  
TWENTY-FIVE MINUTES. DURING EITHER PERIOD, LISTENER  
PERFORMANCE WAS NOT AFFECTED BY EXPOSURE TO NOISE  
BETWEEN TESTS. THE PERFORMANCES OF EXPERIMENTAL  
AND CONTROL GROUPS WERE PARALLEL FROM TEST TO TEST.  
DURING THE FIFTY-MINUTE PERIOD, SUCCESSIVE TEST  
SCORES WERE SIGNIFICANTLY DIFFERENT; DURING THE  
THREE-HOUR AND TWENTY-FIVE MINUTE PERIOD, SUCCESSIVE  
TEST SCORES WERE NOT SIGNIFICANTLY DIFFERENT.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 639 682 6/16  
JOHNS HOPKINS UNIV BALTIMORE MD PSYCHOLOGICAL LAB

AUDITORY THRESHOLDS OF SHORT TONES AS A FUNCTION OF  
REPETITION RATES, (U)

MAY 47 10P GARNER, W. R. ;  
CONTRACT: NSORI-166(01),  
MONITOR: SPECDEVCE 166-1-13

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN THE JOURNAL OF THE  
ACOUSTICAL SOCIETY OF AMERICA V19 N4 P600-8 JUL  
1947.

SUPPLEMENTARY NOTE:

DESCRIPTORS: (•HEARING, THRESHOLDS(PHYSIOLOGY)),  
AUDITORY PERCEPTION, NOISE, FREQUENCY (U)

AUDITORY THRESHOLDS WERE OBTAINED FOR REPEATED  
SHORT TONES (SINE-WAVE) WITH REPETITION RATES  
BETWEEN 1/4 AND 100 PER SECOND, AND TONE DURATIONS  
BETWEEN 1 AND 50 MILLISECONDS. BOTH NOISE-MASKED  
AND QUIET THRESHOLDS WERE MEASURED. ALTHOUGH THE  
TOTAL ENERGY IN A STIMULUS CAN BE CHANGED BY VARYING  
EITHER THE REPETITION RATE OR THE DURATION, THE  
RESULTS SHOW THAT ONLY IN THE LATTER CASE IS THERE AN  
EQUIVALENT SHIFT IN THE THRESHOLD. DISCUSSION OF  
THE RESULTS IN TERMS OF SPECTRAL DISTRIBUTION OF  
ENERGY OF SUCH TONES LEADS TO THE CONCLUSION THAT THE  
EAR DOES NOT PERFORM A FOURIER ANALYSIS OF THESE  
TONES. FURTHER DISCUSSION INDICATES THE CONDITIONS  
NECESSARY FOR TEMPORAL INTEGRATION OF ACOUSTIC ENERGY  
BY THE EAR. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 640 921 6/21

DAVID TAYLOR MODEL BASIN WASHINGTON D C STRUCTURAL  
MECHANICS LAB

EFFECTS OF OVERPRESSURE ON THE EAR,

(U)

AUG 66 14P  
REPT. NO. DTMB-2252  
PROJ: S-F015-14-04,

HIRSCH, ARTHUR E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*BLAST, HEARING), (\*PRESSURE,  
TOLERANCES(PHYSIOLOGY)), (\*EAR, WOUNDS AND INJURIES),  
EXPLOSION EFFECTS, NUCLEAR EXPLOSIONS (U)

TOLERANCE LEVELS OF THE HUMAN EAR TO VARIOUS TYPES  
OF OVERPRESSURE ARE DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 645 898 6/5 5/10  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

RECOVERY FROM IMPULSE NOISE INDUCED ACOUSTIC TRAUMA, (U)

NOV 66 10P FLETCHER, J. L. ; CAIRNS, A. B. ;  
REPT. NO. USAMRL-686  
PROJ: DA-3-A-025601-A-819

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEARING, DEGRADATION), NOISE, AUDIOMETRY,  
FREQUENCY, EXPOSURE (PHYSIOLOGY), ARMY PERSONNEL,  
RECOVERY, THRESHOLDS (PHYSIOLOGY), SPEECH, AUDIO  
FREQUENCY (U)

RECOVERY FROM IMPULSE NOISE INDUCED ACOUSTIC TRAUMA  
WAS EXAMINED IN SOLDIERS STATIONED AT FORT KNOX,  
KY. SERIAL AUDIOGRAMS WERE OBTAINED ON THE DAY  
OF EXPOSURE, ONE DAY, THREE DAYS, ONE WEEK, TWO  
WEEKS, FOUR WEEKS, SIX WEEKS, 12 WEEKS, FOUR MONTHS,  
FIVE MONTHS, AND SIX MONTHS POST EXPOSURE.  
RECOVERY FROM TEMPORARY THRESHOLD SHIFTS AS LARGE  
AS 35 DB WAS OBSERVED AT FREQUENCIES FROM 500 - 2,  
000 CYCLES. AT THE HIGHER FREQUENCIES SHIFTS OF  
MAGNITUDES AS GREAT AS 85 DB WERE OBSERVED WITH  
GOOD RECOVERY MOST OF THE TIME. OUR RESULTS  
INDICATE THAT FOR LEGAL PURPOSES SIX MONTHS IS A  
MINIMUM WAITING PERIOD NECESSARY TO SUBSTANTIATE  
PERMANENT HEARING LOSS. HOWEVER, RECOVERY AT THE  
SPEECH FREQUENCIES IS ESSENTIALLY COMPLETE IN ABOUT  
TWO WEEKS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 646 775 6/10  
MASSACHUSETTS INST OF TECH CAMBRIDGE

THE RELATIONS OF HEARING LOSS TO NOISE EXPOSURE. (U)

54 64P  
CONTRACT: N50R1-078(61)

UNCLASSIFIED REPORT

AVAILABILITY: ALL REQUESTS TO STANDARDS  
ASSOCIATION, INC., 70 E, 45TH ST., NEW YORK 17,  
N. Y. PRICE \$1.50.

DESCRIPTORS: (\*NOISE, \*HEARING), (\*INDUSTRIAL MEDICINE,  
NOISE), DEAFNESS, THRESHOLDS(PHYSIOLOGY),  
EXPOSURE(PHYSIOLOGY), LOW FREQUENCY, AIRCRAFT NOISE, JET  
ENGINE NOISE, AUDIOMETRY, TOLERANCES(PHYSIOLOGY),  
STANDARDS (U)

CONTENTS: DEFINITION OF VARIABLES: HEARING  
LOSS, NOISE, EXPOSURE; THE HUMAN PROBLEMS OF  
INDUSTRIAL NOISE; PRESBYCUSIS; REQUIREMENTS  
FOR FIELD DATA; CONTINUOUS EXPOSURE TO  
STEADY NOISE; THE RELATION OF HEARING  
LOSS AT CERTAIN FREQUENCIES TO OCTAVE BAND  
LEVELS; AVERAGE NET HEARING LOSS  
CONTOURS; TREND CURVES; ESTIMATES OF  
AVERAGE NET HEARING LOSS; CONFIRMATION OF  
THE TREND CURVES; LIMITATIONS OF TREND  
CURVES; SPECTRA AND EXTRAPOLATIONS;  
LIMITATIONS OF TREND CURVES; INTERMITTENT  
EXPOSURE AND NON-STEADY NOISE; LIMITATIONS  
OF TREND CURVES; TEMPORARY THRESHOLD SHIFT;  
REDUCTION IN TEMPORARY THRESHOLD SHIFT AFTER  
CESSATION OF EXPOSURE; EXPOSURE TO LOW-  
FREQUENCY NOISE; GROSS HEARING LOSSES IN  
THREE HYPOTHETICAL GROUPS; INTERMITTENT  
EXPOSURE TO STEADY NOISE; AIRPLANE NOISE;  
JET-ENGINE NOISE; INTERMITTENT EXPOSURE;  
RIVETING NOISE; IMPULSIVE NOISE; PROOF-  
FIRING; IMPACT NOISE; DROP FORGE; RELATION  
OF THRESHOLD SHIFTS TO INITIAL  
AUDIOGRAMS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 646 812 5/10 6 16  
JOHNS HOPKINS UNIV BALTIMORE MD PSYCHOLOGICAL LAB

HEARING,

(U)

52 20P GARNER, WENDELL R. ;  
CONTRACT: NSORI-166(01)  
PROJ: NR-784-001  
MONITOR: SPECDEVEN 166-1-132

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN ANNUAL REVIEW OF  
PSYCHOLOGY V3 P85-104 1952.

DESCRIPTORS: (HEARING, REVIEWS), PSYCHOACOUSTICS,  
DEAFNESS, NOISE, INFORMATION THEORY, SPEECH,  
INTELLIGIBILITY, ELECTROPHYSIOLOGY, EAR, AUDIOMETRY,  
MASKING, THRESHOLDS(PHYSIOLOGY), FATIGUE(PHYSIOLOGY),  
AUDITORY PERCEPTION, NERVE CELLS, PITCH DISCRIMINATION,  
NERVOUS SYSTEM (U)

A REVIEW IS PRESENTED OF RESEARCH PROGRAMS WHICH  
ARE INVESTIGATING THE HEARING PROCESS. THE REPORT  
SUMMARIZES STUDIES DONE IN THE FOLLOWING AREAS:  
ELECTROPHYSIOLOGY OF THE COCHLEA; AUDIOMETRY;  
LOUDNESS AND MASKING; AUDITORY FATIGUE AND  
DEAFNESS; SHORT DURATION AUDITORY FATIGUE;  
MEASUREMENT OF NEURAL FATIGUE; LOUDNESS  
RECRUITMENT; PITCH; LOCALIZATION OF SOUND;  
BINAURAL INTERACTION IN THE NERVOUS SYSTEM;  
HEARING OF SPEECH; FREQUENCY SELECTIVITY IN  
THE NERVOUS SYSTEM; AND AUDITORY THEORY.  
THE BIBLIOGRAPHY LISTS 87 REPORTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 647 540 5/10  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

EXPLORATORY STUDY OF THE EFFECT OF PULSE DURATION ON  
TEMPORARY THRESHOLD SHIFT PRODUCED BY IMPULSE  
NOISE. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 67 18P FLETCHER, JOHN L. ; LOEB,  
MICHEL ;  
REPT. NO. USAMRL-680  
PROJ: DA-3-A-025601-A-819

UNCLASSIFIED REPORT

DESCRIPTORS: (•NOISE, TOLERANCES(PHYSIOLOGY)),  
(•HEARING, THRESHOLDS(PHYSIOLOGY)), AUDIOMETRY (U)

HUMAN SS WERE EXPOSED TO A SERIES OF IMPULSES OF  
VARIABLE DURATION. PRE- AND POST-EXPOSURE HEARING  
WAS EXAMINED TO DETERMINE THE DIFFERENTIAL EFFECT OF  
PULSE DURATION ON TEMPORARY THRESHOLD SHIFT. AN  
APPARENTLY LINEAR DURATION EFFECT WAS OBSERVED.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 652 783 6/10 6/5  
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

DAMAGE RISK CRITERION AND CONTOURS BASED ON PERMANENT  
AND TEMPORARY HEARING LOSS DATA, (U)

65 11P KRYTER, K. D. ;  
CONTRACT: DA-49-193-MD-2235

UNCLASSIFIED REPORT  
AVAILABILITY: PUBLISHED IN AMERICAN INDUSTRIAL  
HYGIENE ASSOCIATION V26 P34-44 JAN-FEB 1965.

DESCRIPTORS: (\*HEARING, PROTECTION), (\*INDUSTRIAL  
MEDICINE, \*DEAFNESS), THRESHOLDS(PHYSIOLOGY),  
AUDIOMETRY, SPEECH RECOGNITION, NOISE,  
EXPOSURE(PHYSIOLOGY) (U)

A DAMAGE RISK CRITERION IS PROPOSED THAT PROVIDES  
MORE PROTECTION FOR THE FREQUENCY REGION OF HEARING  
IMPORTANT TO SPEECH PERCEPTION THAN TO OTHER AREAS.  
DAMAGE RISK CONTOURS ARE DRAWN TO THIS CRITERION ON  
THE BASIS OF RATHER DETAILED TEMPORARY THRESHOLD  
SHIFT DATA OBTAINED IN THE LABORATORY. THE TTS2  
FOUND IN YOUNG ADULTS WITH NORMAL HEARING, FROM AN  
EIGHT-HOUR EXPOSURE TO A NOISE HAS ABOUT THE SAME  
NUMERICAL MAGNITUDE AS THE NIPTS IN INDUSTRIAL  
WORKERS EXPOSED FOR 10 OR MORE YEARS, EIGHT HOURS PER  
WORKDAY, TO ABOUT THE SAME NOISE; IT IS CONCLUDED  
THAT TTS DATA CAN BE USED AS A REASONABLY VALID  
SECONDARY YARDSTICK FOR ASSESSING THE POTENTIAL  
DAMAGE RISK FOR PERMANENT THRESHOLD SHIFTS DUE TO  
EXPOSURE TO NOISE. THE DAMAGE RISK CONTOURS  
PROPOSED REPRESENT A DEGREE OF CALCULATED RISK FOR  
PERSONS EXPOSED TO THE LEVELS, SPECTRA, AND DAILY  
DURATIONS SPECIFIED. THIS RISK CAN BEST BE MET BY  
LOWERING THE LEVELS SPECIFIED BY 10 DB OR SO; IF THIS  
IS NOT PRACTICAL, A PROGRAM FOR MONITORING THE  
HEARING OF NOISE-EXPOSED WORKERS COULD BE USED IN  
ORDER TO DETECT, AND REMOVE FROM THE NOISE, THOSE  
WORKERS SHOWING SIGNIFICANT PERMANENT THRESHOLD  
SHIFTS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 663 639 5/5 6/5  
NAVAL SUBMARINE BASE NEW LONDON CONN

AUDITORY DAMAGE OF OPERATING PERSONNEL ABOARD GUIDED  
MISSILE SHIPS FROM SHORT-DURATION HIGH-INTENSITY  
NOISE. (U)

DESCRIPTIVE NOTE: MEMORANDUM REPT.,  
MAR 58 13P O'HARE, JOHN J. ;  
REPT. NO. SBNL-MEMO-58-4  
PROJ: NAVMED-NM-22-03-20.02  
TASK: NM-22-03-20.02-01

UNCLASSIFIED REPORT

DESCRIPTORS: (HUMAN FACTORS ENGINEERING, FRIGATES),  
(NAVAL PERSONNEL, HEARING), NOISE, GUIDED MISSILES,  
PROTECTION, MILITARY REQUIREMENTS, MILITARY MEDICINE,  
LAUNCHING, CRUISERS, SHIPBOARD (U)  
IDENTIFIERS: CAG 2 VESSEL, CAG 1 VESSEL (U)

DATA ARE PRESENTED ON THE NOISE LEVELS INVOLVED  
DURING MISSILE FIRINGS ABOARD THE SHIPS USS CANBERRA  
AND BOSTON, THE NOISE SPECTRA, INTENSITY LEVELS,  
AND DURATIONS, AT VARIOUS POINTS NEAR THE FIRINGS.  
IT WAS FOUND THAT THE NOISE SPECTRA CONCENTRATED IN  
THE MORE DAMAGING LOW FREQUENCIES AND THAT THE  
INTENSITY LEVELS ALL EXCEEDED CURRENT DAMAGE-RISK  
CRITERIA, BUT ARE OF BRIEF DURATION. BUMED  
RECOMMENDATIONS ON HIGH-INTENSITY NOISE PROTECTION  
PROCEDURES ARE CITED AND PREVENTIVE MEASURES  
OUTLINED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 666 206 5/5 6/5 19/6  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

CRITERIA FOR ASSESSING HEARING DAMAGE RISK FROM  
IMPULSE-NOISE EXPOSURE.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
AUG 67 58P COLES, R. ROSS A. ;  
GARIN, GEORGES R. ; HODGE, DAVID C. ; RICE,  
CHRISTOPHER G. ;  
REPT. NO. HEL-TM-13-67

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEARING, HAZARDS), (\*SMALL ARMS, NOISE),  
HUMAN FACTORS ENGINEERING, AUDITORY ACUITY,  
THRESHOLDS (PHYSIOLOGY), DAMAGE, AUDIOMETRY, TEST  
METHODS, TRANSDUCERS, FIRING TESTS (ORDNANCE)

(U)

CRITERIA ARE PRESENTED FOR ASSESSING DAMAGE RISK  
FROM IMPULSE-NOISE EXPOSURE. THE CRITERIA ARE  
BASED ON CONCLUSIONS OF INDEPENDENT BRITISH AND  
AMERICAN STUDIES AND ON THE WORK OF OTHER RESEARCH  
WORKERS IN THIS FIELD. MOST OF THE STUDIES WHICH  
LED TO THESE CRITERIA WERE PERFORMED WITH NOISE FROM  
SMALL ARMS, BUT THE CRITERIA ARE GENERAL ENOUGH TO  
PERMIT ASSESSMENT OF MOST OTHER TYPES OF IMPULSE  
NOISE. THE VARIABLES WHICH MUST BE CONSIDERED IN  
DETERMINING THE POTENTIAL HEARING HAZARD AND IN  
MAKING PRACTICAL APPLICATION OF THE CRITERIA ARE  
PRESENTED, AND THE PARAMETERS WHICH MUST BE MEASURED  
ARE DEFINED. THE MEASUREMENT TECHNIQUE AND TYPE OF  
TRANSDUCERS TO BE USED ARE DISCUSSED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM07

AD- 671 116 6/19 5/10  
AEROSPACE MEDICAL RESEARCH LABS WRIGHT-PATTERSON AFB  
OHIO

THE EFFECTS OF HIGH INTENSITY NOISE ON HUMAN  
PERFORMANCE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 66-JAN 67,  
JAN 68 25P HARRIS, C. STANLEY ;  
REPT. NO. AMRL-TR-67-119  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, PERFORMANCE(HUMAN)),  
STRESS(PSYCHOLOGY), EFFICIENCY, BROADBAND, INTENSITY,  
MEMORY(PSYCHOLOGY), VISUAL PERCEPTION,  
PERFORMANCE(HUMAN), EAR PROTECTORS, VESTIBULAR  
APPARATUS, EQUILIBRIUM(PHYSIOLOGY),  
STRESS(PHYSIOLOGY)

(U)

FOUR EXPERIMENTS WERE CONDUCTED ON THE EFFECTS OF  
BROADBAND, HIGH INTENSITY NOISE ON HUMAN PERFORMANCE.  
IN TWO EXPERIMENTS THE SUBJECTS' PERFORMANCE WAS  
MEASURED ON A DISCRIMINATION TASK, BASED  
PRIMARILY UPON VISUAL DISCRIMINATION AND SHORT TERM  
MEMORY, AND IN THE OTHER TWO EXPERIMENTS PERFORMANCE  
WAS MEASURED ON A HAND-TOOL DEXTERITY TEST.  
FOUR DIFFERENT NOISE EXPOSURE CONDITIONS WERE USED  
IN EACH EXPERIMENT: CONTROL (70 DB), 120 DB,  
130 DB, AND 140 DB (RE 0.0002 DYNE/SQ CM).  
IN ONE EXPERIMENT USING THE DISCRIMINATION  
TASK, THE SUBJECTS WORE EARPLUGS, AND IN THE OTHER,  
SUBJECTS WORE EARPLUGS AND AN EARMUFF WITH ONE EARCUP  
TO PRODUCE AN ASYMMETRICAL NOISE EXPOSURE AT THE  
EARS. THESE TWO TYPES OF EAR PROTECTORS WERE WORN  
ALSO BY THE SUBJECTS IN THE TWO EXPERIMENTS USING THE  
HAND-TOOL DEXTERITY TASK. DECREMENTS ON  
THE DISCRIMINATION TASK WERE OBTAINED AT THE TWO  
HIGHEST NOISE INTENSITIES FOR THE ASYMMETRICAL  
EXPOSURE AND NO DECREMENTS WERE OBTAINED FOR ANY  
SYMMETRICAL EXPOSURE. WITH THE HAND-TOOL  
DEXTERITY TEST, SIGNIFICANT DECREMENTS WERE  
OBTAINED AT THE NOISE LEVELS OF 130 DB AND 140 DB  
WITH SYMMETRICAL EXPOSURE, AND AT 140 DB WITH THE  
ASYMMETRICAL EXPOSURE. THE DIFFERENCE IN  
PERFORMANCE BETWEEN THE TWO GROUPS WAS DUE TO A  
DIFFERENT INITIAL LEVEL OF ABILITY ON THE TASK RATHER  
THAN DUE TO SYMMETRICAL VERSUS ASYMMETRICAL EXPOSURE  
CONDITIONS.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 671 618 6/3 1974  
LOVELACE FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH  
ALBUQUERQUE N MEX

THE RELATION BETWEEN EARDRUM FAILURE AND BLAST-  
INDUCED PRESSURE VARIATIONS, (U)

AUG 67 64P WHITE, CLAYTON S. ; BOWEN, I.  
G. ; RICHMOND, DONALD R. ;  
CONTRACT: DA-49-146-XZ-372  
MONITOR: DASA 2064

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EXPLOSION EFFECTS, EAR), PHYSIOLOGY,  
LABORATORY ANIMALS, MEMBRANES(BIOLOGY), RUPTURE, BLAST,  
PRESSURE, TOLERANCES(PHYSIOLOGY), SHELTERS, SHOCK TUBES,  
DOGS, RABBITS, GUINEA PIGS, GOATS (U)  
IDENTIFIERS: FORTIFICATIONS, OVERPRESSURE (U)

IN FIELD AND LABORATORY EXPERIMENTS DESIGNED TO  
STUDY OVERALL BLAST EFFECTS, INCIDENTAL OBSERVATIONS  
WERE MADE OF THE EARS OF OVER 490 ANIMALS. THOSE  
INSIDE STRUCTURES WERE EXPOSED TO A VARIETY OF  
'ATYPICAL' BLAST WAVES. THOSE LOCATED INSIDE SHOCK  
TUBES OR IN THE OPEN WHEN HIGH EXPLOSIVES WERE  
DETONATED WERE EXPOSED TO FAIRLY 'TYPICAL' WAVE  
FORMS. AN ATTEMPT WAS MADE TO RELATE THE INCIDENCE  
OF EARDRUM RUPTURE TO VARIOUS ELEMENTS OF THE  
MEASURED PRESSURE-TIME CURVES. THE ASSOCIATION WAS  
NOT THE SAME FOR 'TYPICAL' AND 'ATYPICAL' WAVE FORMS.  
WITHIN THE LIMITS OF THE MEAGER DIFFERENCES WERE  
NOTED AND DISCUSSED WITH EMPHASIS ON THE APPARENT  
WIDE VARIABILITY IN TOLERANCE FOR WHICH AN  
EXPLANATION WAS PROPOSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 680 165 20/1 6/17  
ARMY NATICK LABS MASS PIONEERING RESEARCH LAB

RESEARCH ON ACOUSTICAL PROBLEMS OF THE MILITARY: A  
REVIEW AND FUTURE ASPECT. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
OCT 68 40P TANENHOLTZ, STANLEY D. ;  
PROJ: DA-1-T-0621068121  
TASK: 1-T-062106812102  
MONITOR: USA-NLABS TR-69-44-PR

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ACOUSTICS, PATHOLOGY), (\*PROTECTIVE  
COVERINGS, ARMY RESEARCH), BLAST, VIBRATION, COMBAT  
NOISE, SHOCK(MECHANICS), PHYSIOLOGY, HUMAN FACTORS  
ENGINEERING, ATTENUATION, EAR PROTECTORS, HELMETS,  
PROTECTIVE CLOTHING, STATE-OF-THE-ART REVIEWS,  
MATERIALS, STANDARDS (U)

IDENTIFIERS: ACOUSTIC RADIATION, GRAPHS(CHARTS) (U)

A REVIEW HAS BEEN MADE OF THE LITERATURE IN THE  
AREA OF ACOUSTICS, VIBRATION, SHOCK, AND BLAST  
PHENOMENA RELATED TO EFFECTS ON THE PHYSIOLOGICAL  
SYSTEM AND ATTENUATION EFFECTS OF MATERIALS AND  
DEVICES. IN ADDITION, INFORMATION FROM SOURCES  
OTHER THAN THE LITERATURE PERTINENT TO AN EVALUATION  
OF THE SIGNIFICANCE OF ACOUSTIC HAZARDS IN THE  
MILITARY ENVIRONMENT, IS ALSO PRESENTED. DAMAGE-  
RISK AND STANDARDS CRITERIA ARE PRESENTED, AND  
FURTHER STUDIES ARE SUGGESTED TO ADVANCE THE STATE-  
OF-THE-ART IN ACOUSTIC HAZARDS PROTECTION AS WELL AS  
TO EXPLOIT THE POTENTIALS OF ACOUSTIC PHENOMENA FOR  
THE INVESTIGATION OF MATERIAL PROPERTIES.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM07

AD- 681 534 S/10  
TUFTS UNIV MEDFORD MASS INST FOR PSYCHOLOGICAL  
RESEARCH

LOCALIZATION OF SOUND DURING SIMULATED UNILATERAL  
CONDUCTIVE HEARING LOSS, (U)

FEB 68 9P FISHER, H. G. ; FREEDMAN, S.  
J. ;  
CONTRACT: AF 49(638)-1282  
PROJ: AF-9778  
TASK: 977801  
MONITOR: AFOSR 69-0152TR

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN ACTA OTO-LARYNGOLOGICA,  
V66 P213-220, 1968.

DESCRIPTORS: (\*AUDITORY PERCEPTION, AUDITORY SIGNALS),  
NERVOUS SYSTEM, PHYSIOLOGY, NOISE, HEAD(ANATOMY),  
MOTION, EAR, HEARING (U)

THIRTEEN SS WERE REQUIRED TO LOCALIZE PULSED  
NOISE IN AN ACOUSTICALLY TREATED ROOM WHILE THEIR  
HEAD MOVEMENTS WERE RESTRICTED. JUDGMENTS WERE  
MADE (A) WITH BOTH EARS UNOCCCLUDED AND (B)  
WITH THE RIGHT EAR OCCCLUDED SO THAT ITS INPUT WAS  
ATTENUATED BY 40 DB PLUS OR MINUS 5 DB.  
PERFORMANCE WAS HIGHLY ACCURATE UNDER BOTH  
CONDITIONS AND THERE WERE NO SIGNIFICANT DIFFERENCES  
BETWEEN CONDITIONS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 681 834 6/16 6/5  
GOTEBORG UNIV (SWEDEN) DEPT OF OTOLARYNGOLOGY

EFFECT OF NOISE AND TOXIC AGENTS ON THE INNER  
EAR.

(U)

DESCRIPTIVE NOTE: FINAL SCIENTIFIC REPT. 1 AUG 67-31

JUL 68.

DEC 68 7P ENGSTROM, HANS ;

CONTRACT: F61052-67-C-0090

UNCLASSIFIED REPORT

DESCRIPTORS: (•EAR, TOLERANCES(PHYSIOLOGY)), NOISE,  
TOXICITY, TOXIC TOLERANCES, ELECTRON MICROSCOPY, HUMANS,  
ANIMALS, HEARING, STREPTOMYCINS, BLOOD VESSELS,  
AGING(PHYSIOLOGY), ANATOMY, SWEDEN

(U)

UNDER THE CONTRACT THERE HAS BEEN MADE AN EXTENSIVE  
STUDY ON THE NORMAL AND PATHOLOGICALLY ALTERED INNER  
EAR OF ANIMALS AND MAN. THE NORMAL INNER EAR HAS  
BEEN STUDIED BY LIGHT, ELECTRON AND SCANNING ELECTRON  
MICROSCOPY AND NEW TECHNIQUES HAVE BEEN DEVELOPED FOR  
THESE STUDIES. THE SAME TECHNIQUES HAVE ALSO BEEN  
USED FOR THE PATHOLOGICAL EARS. DAMAGE TO THE INNER  
EAR HAS BEEN PRODUCED BY NOISE AND OTOTOXIC AGENTS.  
IN MAN AUTOPSY MATERIAL HAS BEEN USED BUT A SPECIAL  
TECHNIQUE HAS BEEN DEVELOPED TO GET OPTIMAL FIXATION.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 685 887 5/10  
TEXAS UNIV AUSTIN DEFENSE RESEARCH LAB

EFFECT OF SIGNAL DURATION ON DETECTION FOR GATED AND  
FOR CONTINUOUS NOISE, (U)

68 5P TUCKER, ANN ; WILLIAMS, PAUL  
1. ; JEFFRESS, LLOYD A. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF THE ACOUSTICAL  
SOCIETY OF AMERICA, V44 N3 P813-816 SEP 68.  
SUPPLEMENTARY NOTE: SPONSORED IN PART BY OFFICE OF  
NAVAL RESEARCH, WASHINGTON, D. C., NAVAL SHIP  
SYSTEMS COMMAND, WASHINGTON, D. C. AND NATIONAL  
AERONAUTICS AND SPACE ADMINISTRATION, WASHINGTON,  
D. C.

DESCRIPTORS: (\*HEARING, \*ACOUSTIC SIGNALS), NOISE,  
BACKGROUND, PERFORMANCE (HUMAN) (U)

A SERIES OF TWO-ALTERNATIVE FORCED-CHOICE  
EXPERIMENTS SHOWED THAT FOR SHORT DURATIONS, THE  
DETECTION OF A TONAL SIGNAL IN NOISE WHEN THE TWO ARE  
GATED SYNCHRONOUSLY IS SUPERIOR TO THE DETECTION OF  
THE SIGNAL IN A BACKGROUND OF CONTINUOUS NOISE.  
THE EXPERIMENTS ALSO SHOWED THAT FOR GATED SIGNAL  
AND NOISE, THERE IS A STEADY IMPROVEMENT IN DETECTION  
AS THE DURATION IS SHORTENED, PROVIDED THAT HIGHLY  
PRACTICED OBSERVERS ARE EMPLOYED IN THE TASK.  
NAIVE OBSERVERS EXHIBIT A SIMILAR TREND, BUT THEIR  
PERFORMANCE DROPS AT THE SHORT DURATIONS (5 AND 10  
MSEC) WHERE THE LISTENING TASK BECOMES VERY  
DIFFICULT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 695 850

6/5

SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

THE PURE-TONE AIR CONDUCTION AUDIOGRAM.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUL 69

19P

BRAGG, VERNON C. ;

REPT. NO. SAM-TR-69-39, SAM-REVIEW-4-69

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-630 999.

DESCRIPTORS: (•AUDIOMETRY, ANALYSIS), AUDITORY ACUITY,  
AUDITORY PERCEPTION, HEARING, THRESHOLDS(PHYSIOLOGY),  
EFFICIENCY, DIAGNOSIS(MEDICINE), NOISE

(U)

IDENTIFIERS: •AUDIOGRAMS

(U)

MANY U. S. AIR FORCE FLIGHT SURGEONS,  
MEDICAL OFFICERS, AND OTHERS CONCERNED WITH THE  
CONDUCT OF HEARING CONSERVATION PROGRAMS HAVE  
EXPRESSED THE NEED FOR A SET OF GUIDELINES TO BE USED  
IN THE INTERPRETATION OF AUDIOMETRIC DATA.

ALTHOUGH THE AIR CONDUCTION AUDIOGRAM DOES NOT  
PROVIDE SUFFICIENT INFORMATION TO ALLOW A DEFINITIVE  
DIAGNOSIS TO BE MADE, IT USUALLY GIVES AN INDICATION  
AS TO WHETHER A HEARING LOSS IS CONDUCTIVE OR  
SENSORINEURAL IN ORIGIN. IN ADDITION,

DETERMINATION MAY BE MADE FROM THE AUDIOGRAM AS TO  
WHAT FURTHER TESTING SHOULD BE CARRIED OUT AND WHAT  
ACTION MAY BE NECESSARY TO PREVENT FURTHER HEARING  
LOSS. A METHOD FOR INTERPRETATION OF AUDIOMETRIC  
DATA IS PRESENTED. AN EXPLANATION OF THE VARIOUS  
AUDIOMETRIC CONTOURS IS GIVEN, FOLLOWED BY A STEP-BY-  
STEP PROCEDURE FOR ANALYZING THE PURE-TONE AUDIOGRAM.  
IN ADDITION, RECOMMENDATIONS ARE MADE CONCERNING  
THE HANDLING OF PATIENTS WHOSE AUDIOGRAMS ARE NOT  
WITHIN NORMAL LIMITS. UTILIZATION OF THESE  
PROCEDURES WITHIN A COMPREHENSIVE PROGRAM OF HEARING  
TESTING, NOISE CONTROL, AND EDUCATION IS RECOMMENDED  
WHEREVER PERSONNEL WORK IN HAZARDOUS NOISE. THEY  
SHOULD ALSO BE HELPFUL IN DEALING WITH OTHER TYPES OF  
HEARING LOSSES. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 696 500 6/19

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PECULIARITIES OF HUMAN SLEEP UNDER CONDITIONS OF  
CONTINUOUS PROLONGED INFLUENCE OF BROAD-BAND NOISE  
OF AVERAGE INTENSITY, (U)

APR 69 22P MYASNIKOV, V. I. ; KOZERENKO,  
O. P. ; YAKOVLEVA, I. YA. ; MATSNEV, E. I. ;  
LEBEDEVA, I. P. ;

REPT. NO. FTD-MT-24-499-68

PROJ: FTD-7230278

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF AKADEMIYA  
NAUK SSSR. IZVESTIYA. SERIYA BIOLOGICHESKAYA, V33  
N1 P89-98 1968.

DESCRIPTORS: (SLEEP, NOISE), INTENSITY,  
ELECTROPHYSIOLOGY, STIMULATION(PHYSIOLOGY),  
THRESHOLDS(PHYSIOLOGY), ADAPTATION(PHYSIOLOGY), BRAIN,  
SPACE FLIGHT, PHYSIOLOGY, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

STUDIES WERE CONDUCTED AT THE PROF. F. D.  
GARBOV LABORATORY ON THE EFFECTS OF CONTINUOUS  
PROTRACTED BROAD BAND NOISE ON SLEEP AND ON THE  
TRANSITIONAL STATE BETWEEN SLEEP AND WAKEFULNESS TO  
DETERMINE THE PHYSIOLOGICAL BASIS FOR THE DISTURBING  
EFFECTS OF NOISE ON MAN DURING REST. QUALITY OF  
SLEEP WAS EVALUATED SUBJECTIVELY, AND BY THE DYNAMICS  
OF THE BIOELECTRIC ACTIVITY OF THE BRAIN, REACTIONS  
OF WAKING TO ACOUSTIC STIMULATION, CHANGES IN  
PERFORMANCE INDICES (SENSORY MOTOR REACTIONS TO  
LIGHT STIMULUS) AND DEVIATION OF CERTAIN ACOUSTIC  
SENSITIVITY INDEXES (SCREENING THRESHOLD AND  
ACOUSTIC ADAPTATION). A RELATIONSHIP BETWEEN  
LENGTH OF PRESLEEP AND SUBSEQUENT SLEEP STAGES WAS  
ESTABLISHED: THOSE WHO FELL ASLEEP RAPIDLY SLEPT  
SOUNDLY AND AWOKES FEELING WELL, WHILE THOSE HAVING  
DIFFICULTY FALLING ASLEEP SLEPT LIGHTLY, AWAKENED  
FREQUENTLY, AND DID NOT FEEL WELL. EEG  
OBSERVATIONS WERE MADE. THE MOTOR REFLEX LATENT  
PERIOD WAS REDUCED IN THE FIRST GROUP AND INCREASED  
IN THE SECOND GROUP COMPARED TO BACKGROUND DATA.  
IN THE FIRST GROUP FUNCTION OF THE AUDITORY  
ANALYZER WAS RESTORED AND IN THE SECOND GROUP IT WAS  
NOT, AS SHOWN BY RESPECTIVELY LOWERED AND RAISED  
SCREEN THRESHOLDS. IN THE FIRST GROUP THE  
DISTURBANCE OF ACOUSTIC ADAPTION (AFTER 8 HR  
EXPOSURE TO NOISE) WAS REDUCED (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 704 472 6/19  
CIVIL AEROMEDICAL INST OKLAHOMA CITY OKLA

RECOVERY OF MOTOR PERFORMANCE FOLLOWING STARTLE,

(U)

OCT 69 14P THACKRAY, RICHARD I. ;  
TOUCHSTONE, R. MARK ;  
MONITOR: FAA-AM 69-21

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, \*PERCEPTION), (\*MOTOR REACTIONS,  
NOISE), STIMULATION(PHYSIOLOGY), PERFORMANCE(HUMAN),  
RECOVERY, REACTION(PSYCHOLOGY), PULSE RATE, PHYSIOLOGY,  
MOTOR REACTIONS, RESPONSE(BIOLOGY), BEHAVIOR, AVIATION  
MEDICINE, PILOTS (U)

SUDDEN, HIGH-INTENSITY SOUNDS, SUCH AS THOSE  
PRODUCED BY SONIC BOOMS, CAN BE QUITE STARTLING.  
ALTHOUGH MANY STUDIES HAVE INVESTIGATED  
PHYSIOLOGICAL RESPONSE TO STARTLE, MUCH LESS IS KNOWN  
CONCERNING THE EFFECTS OF STARTLE ON PERFORMANCE.  
THE PRESENT STUDY WAS DESIGNED TO PROVIDE FURTHER  
INFORMATION CONCERNING THE EXTENT TO WHICH STARTLE  
DISRUPTS PERFORMANCE, THE RATE OF RECOVERY, AND  
CHARACTERISTICS OF SUBJECTS (SS) WHO DIFFER IN  
SUSCEPTIBILITY TO STARTLE. THIRTY SS WERE TRAINED  
ON BOTH REACTION TIME AND TRACKING TASKS.  
CONTINUOUS RECORDINGS WERE TAKEN OF HEART RATE AND  
SKIN CONDUCTANCE. DURING A SUBSEQUENT PERIOD OF  
CONTINUOUS TRACKING, 'STARTLE' STIMULI (115 DB  
RANDOM NOISE) WERE UNEXPECTEDLY PRESENTED.  
RESULTS REVEALED THE RECOVERY OF TRACKING  
PERFORMANCE FOLLOWING STARTLE TO BE QUITE RAPID;  
PERFORMANCE RETURNED TO PRE-STIMULUS LEVELS WITHIN 15  
SECONDS FOLLOWING STIMULATION. CONTRARY TO SEVERAL  
PREVIOUS STUDIES, REACTION TIMES TO THE STARTLE  
STIMULI DECREASED RELATIVE TO NONSTARTLE REACTION  
TIMES. SS WITH THE GREATEST INCREASE IN TRACKING  
ERROR FOLLOWING STARTLE WERE LEAST PROFICIENT PRIOR  
TO STARTLE. THERE WAS ALSO AN INDICATION THAT  
THESE SS REACTED MORE STRONGLY TO STARTLE, BOTH IN  
TERMS OF SUBJECTIVE RESPONSE AND HEART RATE  
ACCELERATION, THAN THOSE SS WHOSE TRACKING WAS  
LEAST IMPAIRED BY STARTLE. AN APPARENT COVARIATION  
BETWEEN RECOVERY CURVES FOR HEART RATE AND TRACKING  
ERROR WAS FOUND FOLLOWING STARTLE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 721 010 20/1 1/3  
WYLE LABS INC HUNTSVILLE ALA RESEARCH STAFF

NOISE PRIMER FOR THE SUPERSONIC  
TRANSPORT.

(U)

MAR 71 34P  
CONTRACT: FA-SS-71-9

UNCLASSIFIED REPORT

DESCRIPTORS: (\*JET PLANE NOISE, \*SUPERSONIC AIRCRAFT),  
(\*JET TRANSPORT PLANES, \*COMMERCIAL PLANES), SONIC BOOM,  
LAW, UNITED STATES GOVERNMENT, JET ENGINE NOISE,  
AIRPORTS, REDUCTION, URBAN AREAS (U)

IDENTIFIERS: \*NOISE POLLUTION, \*SUPERSONIC  
TRANSPORTS (U)

THE FIRST AIM OF THE BOOKLET IS TO CLARIFY THE  
BASIC CONCEPTS AND TERMINOLOGY NECESSARY IN ANY  
DISCUSSION OF AIRPORT-COMMUNITY NOISE AND THE SST.  
THE SECOND AIM OF THE BOOKLET IS TO DESCRIBE THE  
EXPECTED NOISE OF THE PLANNED COMMERCIAL SST--USING  
THE TERMINOLOGY AND CONCEPTS DEVELOPED TO DESCRIBE  
AIRCRAFT NOISE. THIS DESCRIPTION TRIES TO PUT SST  
NOISE INTO PERSPECTIVE BY: SUMMARIZING THE  
STATUS OF THE MAJOR EFFORTS TO REDUCE SST NOISE;  
CLARIFYING SOME OF THE OLD NUMERICAL VALUES FOR  
SST NOISE WHICH HAVE CAUSED CONFUSION; COMPARING  
THE NOISE OF THE SST WITH THAT OF OTHER AIRPLANES  
IN TERMS OF CERTIFICATION NOISE LEVELS; AND SHOWING  
HOW THE AIRPORT-COMMUNITY NOISE FROM SST OPERATIONS  
FITS INTO THE NOISE PICTURE ALONG WITH THE NEW  
AIRPLANES OF THE FUTURE. (AUTHOR)

(U)



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UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 722 365 20/1 1/5  
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS  
NOISE EXPOSURE FORECAST CONTOURS FOR  
EXPECTED 1985 AND 1990 OPERATIONS AT SEVEN U.  
S. AIRPORTS. (U)

JAN 71 93P  
REPT. NO. BBN-2076

UNCLASSIFIED REPORT

DESCRIPTORS: (\*JET PLANE NOISE, PREDICTIONS),  
(\*AIRPORTS, PLANNING), SUPERSONIC AIRCRAFT, COMMERCIAL  
PLANES, JET TRANSPORT PLANES, TAKEOFF, STATISTICAL DATA (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*SUPERSONIC TRANSPORT  
PLANES (U)

THE REPORT SUMMARIZES A STUDY OF THE PROBABLE  
IMPACT OF FUTURE SUPERSONIC TRANSPORT (SST)  
AIRCRAFT OPERATIONS ON THE NOISE ENVIRONMENT AROUND  
SEVEN AIRPORTS IN THE UNITED STATES. THE NOISE  
ENVIRONMENT IS DEPICTED IN TERMS OF NOISE  
EXPOSURE FORECAST (NEF) CONTOURS OF NEF 30  
AND 40 VALUES FOR PROJECTED 1985 AND 1990 OPERATIONS  
AT THE FOLLOWING SEVEN AIRPORTS: ANCHORAGE  
INTERNATIONAL AIRPORT (ANC); LOGAN  
INTERNATIONAL AIRPORT, BOSTON (BOS);  
HONOLULU INTERNATIONAL AIRPORT (HNL); JOHN  
F. KENNEDY INTERNATIONAL AIRPORT, NEW  
YORK (JFK); LOS ANGELES INTERNATIONAL  
AIRPORT (LAX); SEATTLE-TACOMA INTERNATIONAL  
AIRPORT (SEA); SAN FRANCISCO INTERNATIONAL  
AIRPORT (SFO). SETS OF NOISE CONTOURS ARE  
GIVEN FOR EACH AIRPORT FOR THE TWO PROJECTIONS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 723 464 6/16 20/1  
CIVIL AEROMEDICAL INST OKLAHOMA CITY OKLA

NOISE AUDIOMETRY.

(U)

JAN 71 8P TOBIAS, JERRY V. ;  
REPT. NO. FAA-AM-71-1  
MONITOR: FAA-AM 71-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AUDIOMETRY, \*NOISE), HEARING, AUDITORY  
ACUITY, AUDITORY PERCEPTION, MEASUREMENT,  
INSTRUMENTATION, MASKING, AIRCRAFT, OTORHINOLARYNGOLOGY (U)

THE DISPLACEMENT OF A THRESHOLD FROM ITS MEASURED-  
IN-THE-QUIET VALUE TO THE VALUE IT TAKES IN THE  
PRESENCE OF ANOTHER SOUND IS MASKING. MEASUREMENT  
OF THAT DISPLACEMENT IS MASKING AUDIOMETRY. AND THE  
MEASUREMENT OF DISPLACEMENTS AT A LARGE NUMBER OF  
FREQUENCIES PRODUCES MASKING PATTERNS. THIS PAPER  
CONCERNS ITSELF WITH A PROCEDURE THAT PRODUCES  
MASKING PATTERNS WITH GOOD PRECISION, SENSITIVITY,  
AND RAPIDITY WITHOUT THE PROBLEMS OF TONAL  
INTERFERENCE AND BEATS THAT NORMALLY INTERFERE WITH  
THE DETERMINATION OF MASKING PATTERNS. SEVERAL  
APPLICATIONS OF THE TECHNIQUES ARE SUGGESTED,  
INCLUDING ONE FOR DETERMINING THE AUDITORY EFFECTS  
PRODUCED BY AIRCRAFT NOISES, AND ONE FOR TESTING  
HEARING PROTECTORS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 724 344 20/1  
CATHOLIC UNIV OF AMERICA WASHINGTON D C INST OF OCEAN  
SCIENCE AND ENGINEERING

A LITERATURE SURVEY OF NOISE POLLUTION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAR 71 96P SHIH, H. H. ;  
REPT. NO. 71-5  
CONTRACT: N00014-69-A-0432

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, \*REVIEWS), PUBLIC HEALTH,  
ENVIRONMENT, STRESS(PSYCHOLOGY), STRESS(PHYSIOLOGY),  
CONTROL, HEARING, INDUSTRIAL MEDICINE, SONIC BOOM,  
BIBLIOGRAPHIES  
IDENTIFIERS: \*NOISE POLLUTION

(U)  
(U)

PHYSICALLY, NOISE IS A COMPLEX SOUND THAT HAS  
LITTLE OR NO PERIODICITY. HOWEVER, THE ESSENTIAL  
CHARACTERISTIC OF NOISE IS ITS UNDESIRABILITY.  
THUS, NOISE CAN BE DEFINED AS ANY ANNOYING OR  
UNWANTED SOUND. IN RECENT YEARS, THE RAPID INCREASE  
OF NOISE LEVEL IN OUR ENVIRONMENT HAS BECOME A  
NATIONAL PUBLIC HEALTH HAZARD. NOISE AFFECTS MAN'S  
STATE OF MENTAL, PHYSICAL, AND SOCIAL WELL-BEING.  
THE PROBLEM FORMS A SPECIAL TYPE OF AIR POLLUTION.  
NOISE STUDY IS A RATHER NEW SUBJECT AMONG OTHER  
BRANCHES OF SCIENCE. THE TRANSITION FROM ART TO  
NEAR-SCIENCE STARTED FROM BEFORE THE WORLD WAR  
II. THE WORK IS AN ATTEMPT TO ARRIVE AT AN  
UNDERSTANDING OF THE GENERAL SITUATION ON THE PROBLEM  
OF NOISE. THE SURVEY CONSISTS OF FOUR MAJOR  
PARTS: THE PRESENT STATUS OF NOISE POLLUTION, ITS  
SOURCES, ITS EFFECTS, AND THE CONTROL. MANY URGENT  
RESEARCH NEEDS ARE ALSO IDENTIFIED. FINALLY, LISTS  
OF TERMINOLOGY AND BIBLIOGRAPHY RELATING TO NOISE  
POLLUTION PROBLEMS ARE PROVIDED. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 724 709 13/2  
NAVAL UNDERSEA RESEARCH AND DEVELOPMENT CENTER SAN DIEGO  
CALIF

NUC SYMPOSIUM ON ENVIRONMENTAL PRESERVATION,  
20-21 MAY 1970.

(U)

MAR 71 183P  
REPT. NO. NUC-TP-215

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SYMPOSIA, \*WATER POLLUTION), (\*ECOLOGY,  
WATER POLLUTION), (\*MARINE BIOLOGY, WATER POLLUTION),  
(\*SEALS(MAMMALS), WATER POLLUTION), (\*POLYMERS,  
\*TOXICITY), MONITORS, OCEANS, CALIFORNIA, HAWAII, OCEAN  
CURRENTS, FISHES, HAZARDS, MANAGEMENT PLANNING AND  
CONTROL (U)

IDENTIFIERS: WATER POLLUTION EFFECTS, \*WATER POLLUTION  
DETECTION, \*NOISE POLLUTION, \*OILS, \*POLLUTION,  
\*POLLUTION, \*POPULATION GROWTH, \*SAN  
DIEGO(CALIFORNIA), SEA LIONS, \*SOLID WASTE DISPOSAL,  
\*DRAG REDUCING POLYMERS (U)

CONTENTS: PRINCIPLES OF EVOLUTION AND THE  
ECOLOGICAL CRISIS; ALTERNATIVES TO OVERPOPULATION;  
EXAMPLES OF SAN DIEGO NOISE CLIMATE; NUC'S  
EFFORTS TOWARD AN ACCEPTABLE NOISE ENVIRONMENT;  
LOW-POLLUTION AUTOMOBILE ENGINE; SEA-SURFACE  
SLICKS; ELEPHANT SEAL AND SEA LION MORTALITY ON  
SAN MIGUEL ISLAND; SAN CLEMENTE ISLAND AS  
A SITE FOR POLLUTION RESEARCH; OCEAN POLLUTION BY  
SUNKEN SHIPS; POTENTIAL HAZARDS OF NON-DEGRADABLE  
MATERIALS AS AN ENVIRONMENTAL POLLUTANT; POLLUTION  
POTENTIAL OF DRAG-REDUCING POLYMERS; ENVIRONMENTAL  
SURVEILLANCE, AN ESSENTIAL SAFEGUARD AGAINST  
POLLUTION; ENVIRONMENTAL MANAGEMENT - WHAT CAN  
NAVY SCIENCE CONTRIBUTE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTRQL NO. /ZOM07

AD- 725 144 6/19  
NAVY EXPERIMENTAL DIVING UNIT WASHINGTON D C

NOISE: A HAZARD TO DIVERS AND HYPERBARIC  
CHAMBER PERSONNEL.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAY 71 30P SUMMITT, JAMES K. ; REIMERS,  
STEPHEN D. ;  
REPT. NO. NEDU-RR-5-71

UNCLASSIFIED REPORT

DESCRIPTORS: (•NOISE, •DIVING), HAZARDS, PERSONNEL,  
PRESSURE, DECOMPRESSION SICKNESS, HEARING, DEAFNESS,  
PHYSIOLOGY, STRESS(PHYSIOLOGY)  
IDENTIFIERS: HYPERBARIC CONDITIONS

(U)

(U)

QUANTITATIVE INFORMATION DESCRIBING AMBIENT NOISE  
IN THE DIVING ENVIRONMENT IS ALMOST NON-EXISTENT.  
SENSORINEURAL HEARING DEFICITS THAT HAVE BEEN  
OBSERVED IN SOME DIVING GROUPS HAVE BEEN ATTRIBUTED  
TO PREVIOUS NOISE EXPOSURE IN NON-DIVING SITUATIONS  
SUCH AS EXPOSURE TO SMALL ARMS FIRE, ENGINE ROOM  
NOISE OR FLIGHT DECK NOISE. THIS REPORT DESCRIBES A  
SERIES OF EXPERIMENTS CONDUCTED AT THE NAVY  
EXPERIMENTAL DIVING UNIT TO DETERMINE THE SOUND  
LEVEL IN A VARIETY OF HELMET DIVING AND HYPERBARIC  
CHAMBER SITUATIONS FROM THE SURFACE TO A DEPTH OF 200  
FEET. THE DATA IS DEFINED IN TERMS OF THE HEARING  
DAMAGE RISK CRITERIA CURRENTLY IN USE BY THE NAVY.  
RESULTS INDICATE THAT OPERATIONS INVOLVING BOTH  
DIVING HELMETS AND HYPERBARIC CHAMBERS FREQUENTLY  
EXPOSE PERSONNEL TO HAZARDOUS LEVELS OF NOISE  
DEPENDING ON THE LENGTH OF TIME OF THE EXPOSURE.  
THREE CASES OF TEMPORARY SENSORINEURAL HEARING LOSS  
THOUGHT TO BE PELATED TO NOISE EXPOSURE DURING AIR  
HELMET DIVES ARE ALSO PRESENTED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 726 217 6/19 13/12  
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C COMM ON HEARING BIOACOUSTICS BIOMECHANICS

HEARING CONSERVATION FOR SUBMARINERS, (U)

JUN 71 9P WARD, W. DIXON ;  
CONTRACT: N00014-67-A-0244-0211  
PROJ: NR-140-113

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT OF WORKING GROUP 64.

DESCRIPTORS: (\*SUBMARINE PERSONNEL, \*HEARING),  
(\*SUBMARINE NOISE, HAZARDS), PROTECTION,  
THRESHOLDS(PHYSIOLOGY), TOLERANCES(PHYSIOLOGY), NOISE,  
CONTROL, STRESS(PHYSIOLOGY) (U)

THE REPORT ADVISES THE U.S. NAVY CONCERNING  
HEARING CONSERVATION ABOARD FUTURE SUBMARINES.  
INCLUDED ARE CRITERIA FOR HAZARD, AS WELL AS  
SUGGESTED TECHNIQUES FOR HEARING PROTECTION,  
INVOLVING PERSONAL PROTECTION, ENVIRONMENTAL DAMPING,  
AND NOISE CONTROL AT THE SOURCE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 726 333 6/19  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

THE SUSCEPTIBILITY OF THE CHINCHILLA EAR TO  
DAMAGE FROM IMPULSE NOISE.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT.,  
MAR 71 15P LUZ, GEORGE A. MOSKO, JAMES  
D. ;  
REPT. NO. USAMRL-921  
PROJ: DA-3-A-061102-B-71R  
TASK: 3-A-061102-B-71-R-03

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, \*STRESS(PHYSIOLOGY)), (\*EAR,  
NOISE), (\*AUDITORY PERCEPTION, NOISE), DAMAGE, HEARING,  
ELECTROMAGNETIC PULSES, SENSITIVITY, RODENTS, MONKEYS,  
LABORATORY ANIMALS (U)

FIVE MONAURAL CHINCHILLAS WERE EXPOSED TO IMPULSES  
OF 168 DB SPL, AND THE LOSS OF SENSITIVITY FOR  
THE PURE TONES OF .3, .75, 1.5, 4.0, 6.0, 7.9, 11.0,  
14.5, AND 16.5 KHZ WAS DETERMINED THROUGH AN  
AVOIDANCE CONDITIONING TECHNIQUE. THE RECOVERY OF  
SENSITIVITY WAS STUDIED OVER 64 DAYS AFTER EXPOSURE.  
THE CHINCHILLAS PROVED TO BE MUCH MORE SUSCEPTIBLE  
TO THIS NOISE THAN THE RHESUS MONKEY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 728 332 5/10 20/1  
STANFORD RESEARCH INST MENLO PARK CALIF

A STUDY OF SENSITIVITY TO NOISE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 71 65P BECKER, R. W. ; POZA, F. ;  
KRYTER, K. D. ;  
CONTRACT: DOT-FA69WA-2211  
MONITOR: FAA-EQ 71-4

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, SENSITIVITY), (\*PSYCHOPHYSIOLOGY,  
\*SONIC BOOM), AUDITORY PERCEPTION, PSYCHOACOUSTICS,  
REACTION(PSYCHOLOGY), PERSONALITY, ATTITUDES,  
SIMULATION, ANALYSIS OF VARIANCE  
IDENTIFIERS: NOISE POLLUTION

(U)

(U)

IN THE STUDY, 140 SUBJECTS WERE EXPOSED TO  
SIMULATED SONIC BOOMS AND RECORDED RESIDENTIAL NOISES  
IN ONE, TWO, OR THREE TWO-HOUR SESSIONS OVER A PERIOD  
OF SIX MONTHS. ELECTROPHYSIOLOGICAL MEASURES OF  
HEART RATE AND ELECTROMYOGRAPHIC RESPONSES TO THE  
STIMULI WERE ANALYZED. BIOGRAPHICAL,  
DEMOGRAPHICAL, AND PERSONALITY INVENTORIES WERE ALSO  
OBTAINED FOR EACH OF THE SUBJECTS. THE PURPOSE OF  
THIS RESEARCH WAS TO: DETERMINE WHETHER THERE ARE  
DIFFERENT DEGREES OF PSYCHOLOGICAL AND PHYSIOLOGICAL  
SENSITIVITY TO NOISE IN A LARGE GROUP OF PEOPLE; TO  
DETERMINE WHETHER AND HOW SUCH SENSITIVITY VARIED IN  
TIME; AND TO RELATE SUCH SENSITIVITY TO OTHER  
PSYCHOLOGICAL AND PERSONALITY VARIABLES.  
SIGNIFICANT DIFFERENCES IN PSYCHOLOGICAL  
SENSITIVITY TO NOISE WERE FOUND IN THE SUBJECT  
POPULATION. THESE DIFFERENCES REMAINED STABLE FOR  
THE DURATION OF THE EXPERIMENT AND WERE ALSO FOUND TO  
BE RELATED TO THE ATTITUDINAL AND BELIEF STRUCTURES  
OF THE INDIVIDUALS. DEFINITE PHYSIOLOGICAL  
RESPONSES TO THE SIMULATED SONIC BOOMS WERE OBSERVED.  
HOWEVER, THE PHYSIOLOGICAL INDICES USED IN THIS  
RESEARCH DID NOT SHOW INDIVIDUAL DIFFERENCES IN  
PHYSIOLOGICAL SENSITIVITY TO NOISE. THESE RESULTS  
DO NOT PRECLUDE THE POSSIBILITY THAT MORE ELABORATE  
AND EXTENSIVE PSYCHOPHYSIOLOGICAL MEASUREMENT MIGHT  
DEMONSTRATE VARYING PHYSIOLOGICAL SENSITIVITY TO  
NOISE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 728 426 6/19

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL  
WASHINGTON D C COMM ON HEARING BIOACOUSTICS BIOMECHANICS

NON-AUDITORY EFFECTS OF NOISE,

(U)

JUN 71 31P KRYTER, KARL D. ; JANSEN,  
GERD ; PARKER, DONALD ; PARRACK, HORACE O. ;  
THIESSEN, GEORGE ;  
CONTRACT: N00014-67-A-0244-0021

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT OF WORKING GROUP 63.

DESCRIPTORS: (\*NOISE, PUBLIC HEALTH),  
(\*STRESS(PHYSIOLOGY), NOISE), (\*STRESS(PSYCHOLOGY),  
NOISE), TOLERANCES(PHYSIOLOGY), PERFORMANCE(HUMAN),  
PHYSIOLOGY, CARDIOVASCULAR SYSTEM, PATHOLOGY,  
PSYCHOPHYSIOLOGY

(U)

THE REPORT IS A SUMMARY AND EVALUATION OF RESEARCH  
FINDINGS THAT RELATE TO ANY EFFECTS OF NOISE OTHER  
THAN TO THE EAR AND RELATED STRUCTURES. FOR  
EXAMPLE, INCLUDED HEREIN ARE RESEARCH EFFORTS  
CONCERNED WITH PSYCHOLOGICAL EFFECTS OF NOISE,  
EFFECTS ON TASK PERFORMANCE, EFFECTS ON THE CARDIO-  
VASCULAR SYSTEM, AND ON GENERAL HEALTH. THIS  
REPORT ALSO PRESENTS AREAS AND TYPES OF RESEARCH  
STUDIES THAT MAY HELP TO PROVIDE FULL ANSWERS TO  
QUESTIONS ON THE DEGREE OF NOISE CONTROL DESIRABLE  
WITH RESPECT TO THE NON-AUDITORY EFFECTS OF NOISE  
NORMALLY PRESENT IN LIVING AND WORKING ENVIRONMENTS.  
(AUTHOR)

(U)

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UNCLASSIFIED

/ZOM07



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 729 138 6/19 6/5  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

MORPHOLOGICAL CHANGES IN THE HYPOTHALAMUS IN  
AUTONOMIC DISORDERS CAUSED BY STRONG  
AUDITORY STIMULUS (MORFOLOGICHESKIE  
IZMENENIYA V GIPOTALAMUSE PRI VEGETATIVNYKH  
HARUSHENIYAKH, VYZVANN YKH SILNYM ZVYKOVYM  
RAZDRAXHENIEM),

(U)

AUG 71 12P KRIVITSKAYA, G. N. INICHKOV,  
S. M. i  
REPT. NO. FSTC-HT-23-263-71  
PROJ: FSTC-TU23012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF ZHURNAL NEVROPATOLOGII I  
PSIKHIATRII (USSR) V66 N8 P1177-1183 1966.

DESCRIPTORS: (\*AUDITORY NERVE, \*STRESS(PHYSIOLOGY)),  
(\*AUTONOMIC NERVOUS SYSTEM, NERVOUS SYSTEM DISEASES),  
(\*NERVOUS SYSTEM DISEASES, NOISE), (\*THALAMUS, NERVOUS  
SYSTEM DISEASES), HISTOLOGY, BRAIN, NERVOUS SYSTEM,  
PHYSIOLOGY, PATHOLOGY, ADAPTATION(PHYSIOLOGY), USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

THE CONSEQUENCES ARE INVESTIGATED OF STRONG  
AUDITORY IRRITANTS ON THE HYPOTHALAMUS GIVING RISE TO  
MORPHOLOGICAL CHANGES AND ASSOCIATED AUTONOMIC  
DISORDERS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUM07

AD- 729 213 5/10 20/1  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

NOISE AND HUMAN PERFORMANCE,

(U)

JUN 71 50P GREYER, WALTER F. ;  
REPT. NO. AMRL-TR-70-29  
PROJ: AF-7222

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, \*PERFORMANCE(HUMAN)), VEHICLES,  
HEARING, ATTENTION, TRACKING, BEHAVIOR, INDUSTRIES,  
AIRCRAFT, EXPOSURE

(U)

IDENTIFIERS: AUDITORY MASKING

(U)

THE POSSIBLE EFFECTS OF NOISE ON HUMAN PERFORMANCE HAVE BEEN THE SUBJECT OF CONSIDERABLE RESEARCH DATING BACK TO 1916. THIS INTEREST HAS BEEN STIMULATED BY CONCERN ABOUT NOISE IN FACTORIES, OFFICES, SCHOOLS, AIRCRAFT AND OTHER MILITARY VEHICLES. TWO VERY DIRECT AND HARMFUL EFFECTS OF NOISE, PERMANENT HEARING LOSS AND AUDITORY MASKING, ARE TREATED ONLY BRIEFLY IN THIS REVIEW. SPECIAL ATTENTION IS GIVEN TO THE SO-CALLED NONAUDITORY EFFECTS ON SUCH PERFORMANCE MEASURES AS REACTION TIME, VIGILANCE, TIME ESTIMATION, TRACKING, MANUAL MANIPULATION, INTELLECTUAL CAPACITIES, AND INDUSTRIAL WORK TASKS. OVERALL, THE RESEARCH DATA ON NOISE AND HUMAN PERFORMANCE APPEAR RATHER CONTRADICTORY AND INCONSISTENT. WHILE MANY STUDIES HAVE FOUND NO PERFORMANCE IMPAIRMENT, AND EVEN IMPROVEMENT, THERE ARE SOME TYPES OF MEASURES THAT RATHER CONSISTENTLY SHOW DECREMENTS FROM EXPOSURE TO NOISE. SOME THEORETICAL EXPLANATORY MECHANISMS TO ACCOUNT FOR EFFECTS OF NOISE ON PERFORMANCE ARE INCLUDED IN THE REVIEW. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY. SEARCH CONTROL NO. /ZOM07

AD- 730 065 6/19  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

EFFECT OF AVIATION NOISE ON SOME INDICES OF  
PROTEIN AND VITAMIN METABOLISM (VLIYANIE  
AVIATSIONNOGO SHUMA NA NEKOTORYE POKAZATELI  
BELKOVOGO I VITAMINNOGO OBmena), (U)

AUG 71 IOP UDALOV, YU. F. ; LAPAEV, E.  
V. ; SYZRANTSEV, YU. K. ;  
REPT. NO. FSTC-HT-23-272-71  
PROJ: FSTC-T7023012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM VOENNO-MEDITSINSKII  
ZHURNAL (USSR) N7 P61-64.

DESCRIPTORS: (\*AIRPLANE NOISE, \*STRESS(PHYSIOLOGY)),  
(\*PROTEINS, NOISE), (\*VITAMINS, NOISE), METABOLISM,  
ASTRONAUTICS, AVIATION PERSONNEL, PILOTS, GLUTAMIC ACID,  
CENTRAL NERVOUS SYSTEM, AMINO ACIDS, HAZARDS, USSR (U)  
IDENTIFIERS: TRANSLATIONS (U)

RESEARCH RESULTS IN THIS REPORT POINT TO THE NEED  
FOR WIDER EMPLOYMENT OF VITAMINS AND GLUTAMIC ACID TO  
PREVENT THE DAMAGING EFFECTS OF NOISE ON FLYING  
PERSONNEL AND AIRCRAFT MAINTENANCE PERSONNEL.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 731 131 6/14  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

HEARING OF YOUNG AIRMEN ENTERING NOISE  
EXPOSURE CAREER FIELDS.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. NOV 70-JUN 71,  
AUG 71 12P SUTHERLAND, HARRELL C. , JR.;  
GASAWAY, DONALD C. ; BOYER, JAMES F. , JR;  
REPT. NO. SAM-TR-71-36  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AUDIOMETRY, \*AIR FORCE PERSONNEL),  
AUDITORY ACUITY, RECRUITING, HEARING, NOISE, HAZARDS,  
EXPOSURE

(U)

MEDIAN HEARING LEVELS WERE DETERMINED FOR 225 YOUNG  
AIRMEN WHO WERE ENTERING TRAINING FOR OCCUPATIONS  
INVOLVING EXPOSURE TO POTENTIALLY HAZARDOUS NOISE.  
THE VALUES WERE EXTRACTED FROM HEARING CONSERVATION  
DATA FORMS RECEIVED FROM SHEPPARD AFB, TEXAS.  
THE MEDIANS WERE COMPATIBLE WITH THOSE REPORTED FOR  
THREE OTHER GROUPS OF YOUNG ADULT MEN. THESE  
MEDIAN HEARING LEVELS WERE DETERMINED TO ESTABLISH AN  
APPROPRIATE REFERENCE FOR ASSESSING THE HEARING OF  
INDIVIDUALS EXPOSED TO POTENTIALLY HAZARDOUS NOISE.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 731 146 5/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

COMBINED EFFECTS OF NOISE AND VIBRATION ON  
MENTAL PERFORMANCE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. SEP 70-FEB 71,  
AUG 71 20P HARRIS, C. STANLEY ; SOMMER,  
HENRY C. ;  
REPT. NO. AMRL-TR-70-21  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STRESS(PSYCHOLOGY), PERFORMANCE(HUMAN)),  
(\*NOISE, STRESS(PSYCHOLOGY)), (\*VIBRATION,  
STRESS(PSYCHOLOGY)), PERFORMANCE TESTS, ACHIEVEMENT  
TESTS, MEMORY, INTENSITY (U)  
IDENTIFIERS: MENTAL PERFORMANCE (U)

TWO EXPERIMENTS WERE CONDUCTED TO DETERMINE THE  
COMBINED EFFECTS OF NOISE AND VIBRATION ON MENTAL  
PERFORMANCE. IN EXPERIMENT 1, TEN SUBJECTS WERE  
TESTED ON A COMBINATION SHORT TERM MEMORY AND  
SUBTRACTION TASK DURING EXPOSURE TO FOUR DIFFERENT  
INTENSITIES OF BROADBAND NOISE. ANOTHER GROUP OF  
TEN SUBJECTS WAS TESTED USING THE SAME NOISE  
INTENSITIES IN COMBINATION WITH 0.25G (PEAK)  
VERTICAL VIBRATION AT 5HZ. NOISE ALONE, AND  
VIBRATION WITH LOW LEVEL NOISE (80 DB AND 90 DB  
RE 0.0002 DYNE/SQ CM) HAD NO ADVERSE EFFECTS ON  
TASK PERFORMANCE WHILE THE HIGHEST LEVEL OF NOISE  
(110 DB) COMBINED WITH VIBRATION TO PRODUCE A  
SIGNIFICANT REDUCTION IN THE NUMBER OF CORRECT  
RESPONSES. IN EXPERIMENT 2, THE SECOND GROUP OF  
SUBJECTS USED IN EXPERIMENT 1 WAS TESTED DURING  
EXPOSURE TO THE FOLLOWING CONDITIONS: NO VIBRATION  
(CONTROL), VIBRATION AT 5 HZ - 0.25G, 7 HZ -  
0.30G, AND 11 HZ - 0.50G, ALL COMBINED WITH 80 DB  
NOISE. SUBSEQUENTLY THESE SAME VIBRATION CONDITIONS  
WERE PRESENTED WITH 107 DB NOISE. HIGH INTENSITY  
NOISE AND VIBRATION COMBINED TO PRODUCE A GREATER  
DECREMENT IN PERFORMANCE THAN EITHER STRESSOR ALONE.  
VIBRATION AT 5 HZ WAS A MORE SENSITIVE FREQUENCY  
FOR MENTAL SUBTRACTION PERFORMANCE THAN 7HZ AND 11  
HZ WHEN THE THREE FREQUENCIES WERE PRESENTED IN  
CONJUNCTION WITH HIGH INTENSITY NOISE.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 731 154 6/19 20/1  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

COMPARISON OF A-WEIGHTED AUDITORY RISK  
CRITERIA WITH OCTAVE-BAND ESTIMATES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. NOV 70-MAR 71,  
JUL 71 19P GASAWAY, DONALD C. ;  
SUTHERLAND, HARRELL C. , JR;  
REPT. NO. SAM-TR-71-19  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: (•NOISE, THRESHOLDS(PHYSIOLOGY)), HEARING,  
HAZARDS, AIRPLANE ENGINE NOISE, INTENSITY, SAFETY (U)

THE RECENT TREND TOWARD ADOPTION OF A-WEIGHTED  
SOUND LEVELS TO IDENTIFY DEGREES OF AUDITORY RISK HAS  
PROMPTED INVESTIGATIONS TO DETERMINE MODIFICATIONS  
WHICH MUST BE MADE WHEN APPLYING THE A-WEIGHTED  
METHOD TO SPECIFIC NOISE ENVIRONMENTS. THIS REPORT  
COMPARES RECENTLY PROPOSED CRITERIA BASED ON A-  
WEIGHTED SOUND LEVELS WITH CRITICAL LIMITS BASED ON  
OCTAVE-BAND DATA AS PROPOSED BY WORKING GROUP 46  
OF THE COMMITTEE ON HEARING, BIOACOUSTICS, AND  
BIOMECHANICS OF THE NATIONAL ACADEMY OF  
SCIENCES--NATIONAL RESEARCH COUNCIL. THE  
USE OF C--A AS A CORRECTION FACTOR TO EQUATE  
DBA LEVELS WITH OCTAVE-BAND ASSESSMENTS IS  
DISCUSSED. NOISE CONDITIONS WITHIN THE COCKPITS OF  
FIXED- AND ROTARY-WIND AIRCRAFT WERE USED AS THE  
BASIS FOR THE COMPARISONS. RESULTS INDICATE THAT  
USE OF A-WEIGHTED SOUND LEVELS FOR ESTIMATING  
POTENTIALLY HAZARDOUS EXPOSURES OF THE TYPE  
ENCOUNTERED IN AIRCRAFT MUST BE APPROACHED WITH  
CAUTION FOR TWO REASONS: (1) SPECTRUM  
CONTENT OF A GIVEN NOISE INFLUENCES THE DEGREE OF  
AUDITORY RISK ASSOCIATED WITH SINGLE VALUES OF DBA,  
AND (2) THE RELATIONSHIP BETWEEN DURATION AND  
INTENSITY OF NOISE IS CURVILINEAR, RATHER THAN LINEAR  
AS ASSUMED BY THE WALSH-HEALEY ACT PROVISIONS.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 731 184 5/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

EFFECTS OF NOISE ON SERIAL SEARCH  
PERFORMANCE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 70-MAR 71,  
JUL 71 33P HARRIS, C. STANLEY; FILSON,  
GEORGE W. ;  
REPT. NO. AMRL-TR-71-56  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PERFORMANCE(HUMAN), \*NOISE),  
STRESS(PSYCHOLOGY), INTENSITY, PERFORMANCE TESTS

(U)

TO EVALUATE BROADBENT'S STATEMENTS CONCERNING THE NECESSARY CONDITIONS FOR DEMONSTRATING AN ADVERSE EFFECT OF NOISE ON HUMAN PERFORMANCE, 70 SUBJECTS WERE TESTED ON A SERIAL SEARCH TASK. PERFORMANCE WAS MEASURED DURING BROADBAND NOISE EXPOSURE AT AN OVERALL LEVEL OF 105 DB RE 0.0002 DYNE PER SQUARE CENTIMETER. THE PERFORMANCE OF ONE GROUP OF SUBJECTS WAS MEASURED FOR 36 MINUTES WITH TWO 3-MINUTE INTERPOLATED REST PERIODS, WHILE ANOTHER GROUP WAS TESTED FOR 36 CONSECUTIVE MINUTES WITH NO REST PERIODS. THE PERFORMANCE OF THESE GROUPS WAS COMPARED WITH THE PERFORMANCE OF COMPARABLE CONTROL GROUPS. IN ALL GROUPS, PERFORMANCE WAS MEASURED FOR 5 DAYS. NOISE PRODUCED A STATISTICALLY SIGNIFICANT REDUCTION IN THE NUMBER COMPLETED FOR THE REST GROUP FOR THE FIRST 12 MINUTES OF TESTING ON EACH DAY. THERE WERE NO SIGNIFICANT DIFFERENCES BETWEEN THE NOISE AND CONTROL GROUP DURING THE LAST 24 MINUTES OF TESTING. FOR THE NO REST GROUPS, NOISE RESULTED IN A SMALLER NUMBER OF ITEMS COMPLETED ON THE LAST TWO DAYS OF TESTING AND THE DIFFERENCE WAS STATISTICALLY SIGNIFICANT. ON THESE DAYS THE EFFECT WAS CONSTANT THROUGHOUT THE 36 MINUTES OF TESTING. THESE RESULTS ARE INTERPRETED AS GENERALLY SUPPORTING BROADBENT'S POSITION.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 731 185 5/5  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

A REVIEW OF IMPULSE-NOISE RESEARCH AT THE  
HUMAN ENGINEERING LABORATORIES.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
APR 71 39P HODGE, DAVID C. ;  
REPT. NO. HEL-TN-4-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED TO DELAWARE VALLEY  
CHAPTER, ACOUSTICAL SOCIETY OF AMERICA, ROSE  
TREE, PA., 6 JAN 71.

DESCRIPTORS: (•NOISE, HUMAN ENGINEERING), MEASUREMENT,  
HEARING, PATHOLOGY, PROTECTION, ARMY PERSONNEL (U)

THE SIGNIFICANCE OF IMPULSE-NOISE EXPOSURE AS A  
SEVERE ARMY PROBLEM IS DISCUSSED. EFFORTS AT  
ALLEVIATING THESE PROBLEMS ARE REVIEWED UNDER FIVE  
SUBJECT CATEGORIES: DEVELOPMENT OF MEASUREMENT  
TECHNIQUES, CONDUCT OF TEMPORARY HEARING LOSS  
INVESTIGATIONS, NOISE SUPPRESSION EXPERIMENTS,  
DETERMINATION OF THE LIMITS OF HEARING PROTECTION,  
AND DEVELOPMENT OF HEARING DAMAGE-RISK CRITERIA.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 731 467 20/1  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

BASELINE NOISE MEASUREMENTS OF THE OH-58A  
HELICOPTER.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
APR 71 72P LINC, DONALD L. ;  
REPT. NO. HEL-TN-3-71

UNCLASSIFIED REPORT

DESCRIPTORS: (•NOISE, •HELICOPTERS), MACHINE GUNS,  
AIRPLANE NOISE, VOICE COMMUNICATION SYSTEMS,  
INTELLIGIBILITY, HEARING, HAZARDS, STATISTICAL DATA (U)  
IDENTIFIERS: XM-27E1 GUNS(7.62-MM), MINIGUNS, M-27  
GUNS(7.62-MM), OH-58A AIRCRAFT, GRAPHS(CHARTS), H-58  
AIRCRAFT (U)

SOUND MEASUREMENTS WERE TAKEN IN THE OH-58A  
(KIOWA) HELICOPTER UNDER CONDITIONS OF MAXIMUM  
PERFORMANCE TAKE OFF AND CLIMB, NORMAL CRUISE,  
DESCENT AND HOVER BOTH WITH AND WITHOUT SOUNDPROOFING  
INSTALLED. MEASUREMENTS WERE TAKEN OF THE NOISE  
PRODUCED BY FIRING THE XM27E1 MINIGUN SYSTEM.  
INTELLIGIBILITY TESTS OF THE INTERCOM SYSTEM AND  
ONE RADIO RECEIVER WERE CARRIED OUT. RESULTS ARE  
PRESENTED AND COMPARED TO HUMAN ENGINEERING  
LABORATORIES STANDARD S-1-63B. HEARING  
HAZARD PRESENTED BY WEAPON FIRING IS DISCUSSED.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 732 264 1/2 20/1 14/1  
ALL AMERICAN ENGINEERING CO WILMINGTON DEL

RESEARCH STUDY OF COST EFFECTIVENESS OF  
AUXILIARY LAUNCH SYSTEMS APPLICABLE TO  
COMMERCIAL TRANSPORTS FOR PURPOSES OF NOISE  
ABATEMENT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 71 270P HIGHLEY, F. M. ;  
CONTRACT: DOT-FA70WA-2224  
PROJ: FAA-550-004-03H  
MONITOR: FAA-EQ 71-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*COMMERCIAL PLANES, \*AIRPLANE NOISE),  
(\*TRANSPORT PLANES, \*LAUNCHING), (\*CATAPULTS, COMMERCIAL  
PLANES), (\*COST EFFECTIVENESS, LAUNCHING), FEASIBILITY  
STUDIES, REDUCTION, TAKE-OFF, JETS, THRUST AUGMENTATION,  
EXHAUST GASES (U)  
IDENTIFIERS: \*NOISE POLLUTION (U)

A COST EFFECTIVENESS STUDY WAS MADE TO DETERMINE  
THE FEASIBILITY OF REDUCING THE NOISE ASSOCIATED WITH  
AIRCRAFT TAKING OFF BY APPLYING AUXILIARY LAUNCH  
POWER DURING AIRCRAFT ACCELERATION ON THE GROUND.  
AUXILIARY LAUNCH SYSTEM CATEGORIES CONSIDERED WERE  
REACTION JETS, CATAPULTS, AIRCRAFT EXHAUST  
AUGMENTATION, AND ACCELERATING VEHICLE SYSTEMS.  
THE MOST OPTIMUM SYSTEM STUDIED WAS THE STEAM  
ZIPPER CATAPULT. IT WAS SELECTED ON THE BASIS OF  
ITS ABILITY TO HANDLE THE FULL RANGE OF AIRCRAFT  
(75,000 TO 1,500,000 POUND GROSS WEIGHT), ITS  
HIGH SPEED CAPABILITY (RESULTING IN ABBREVIATED  
TAKE-OFF TIME AND REDUCED NOISE LEVEL DURATION),  
SHORTER LAUNCH STROKE (3882 FEET VERSUS 10,000  
FEET), EASE OF ACHIEVING BI-DIRECTIONAL CAPABILITY,  
AND ECONOMY OF OPERATION. OTHER SYSTEMS GIVEN  
DETAILED EVALUATION WERE THE JET CAR ACCELERATING  
VEHICLE AND THE STEAM-TURBINE CAPSTAN-DRIVEN  
CABLE CATAPULT. THE BASIC GOAL OF NOISE LEVEL  
REDUCTION AT TAKE-OFF IS ACCOMPLISHED TO A  
SIGNIFICANT DEGREE BY THE SELECTED LAUNCHING  
TECHNIQUE. COST OF THE LAUNCH SYSTEM DEVELOPMENT  
PROGRAM, THE AIRPORT INSTALLATION OF A SINGLE  
PROTOTYPE SYSTEM, AND THE MODIFICATION OF FIVE  
(5) AIRCRAFT (INCORPORATION OF LAUNCH  
HOOK(S) AND HIGH-SPEED LANDING GEAR) WOULD BE  
25 TO 32 MILLION DOLLARS BASED UPON END SPEEDS OF 155  
TO 297 KNOTS RESPECTIVELY, (U)

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UNCLASSIFIED

/ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 732 434 20/1 6/16 13/12  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

SMALL-ROCKET NOISE: HAZARDS TO HEARING  
(ADVANCED LAW PROGRAM).

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
MAY 71 40P GARINTHER, GEORGES R. HODGE,  
DAVID C. ;  
REPT. NO. HEL-TM-7-71

UNCLASSIFIED REPORT

DESCRIPTORS: (•ROCKET LAUNCHERS, NOISE), (•HEARING,  
HAZARDS), (•RECOILLESS GUNS, STRESS(PHYSIOLOGY)),  
TOLERANCES(PHYSIOLOGY), EXPOSURE, TEST METHODS, ARMY  
PERSONNEL, THRESHOLDS(PHYSIOLOGY) (U)  
IDENTIFIERS: M-20 ROCKET LAUNCHERS(3.5-IN.), M-72  
ROCKET LAUNCHERS(66-MM), NOISE POLLUTION (U)

TEMPORARY THRESHOLD SHIFTS WERE DETERMINED FOR  
SINGLE EXPOSURES OF SUBJECTS TO IMPULSES PRODUCED BY  
THE M20A1 AND THE M72 ROCKET LAUNCHERS.  
THESE EXPOSURES WERE AT LEVELS UP TO 179 DB  
WITHOUT HEARING PROTECTION, AND UP TO 184 DB WITH  
HEARING PROTECTION. THIS STUDY INDICATES THAT THE  
CHABA IMPULSE NOISE DAMAGE-RISK CRITERION IS VALID  
FOR SINGLE IMPULSES HAVING DURATIONS OF 12 TO 34  
MILLISECONDS. THE FIRER OF THE M72 IS SUBJECTED  
TO 179 DB WHICH IS GREATLY IN EXCESS OF THE  
EXPOSURE CRITERION; PERSONNEL SHOULD NOT BE EXPOSED  
TO SUCH CONDITIONS WITHOUT HEARING PROTECTION. THE  
STANDARD ARMY ISSUE EARPLUG (V51-R) NOMINALLY  
PROVIDES 25 DB ATTENUATION FOR THIS TYPE IMPULSE  
AND PERMITS SAFE EXPOSURES UP TO 184 DB. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 732 617 6/19 5/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

EFFECTS OF COMBINED HEAT, NOISE AND  
VIBRATION STRESS ON HUMAN PERFORMANCE AND  
PHYSIOLOGICAL FUNCTIONS,

(U)

71 7P GREYER, W. F. ; HARRIS, C.  
S. ; MOHR, G. C. ; NIXON, C. W. ; OHLBAUM, M. ;

REPT. NO. AMRL-TR-71-19  
PROJ: AF-7222

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AEROSPACE MEDICINE, V42  
N10 P1092-1097 OCT 71.

DESCRIPTORS: (\*AVIATION MEDICINE, STRESS(PHYSIOLOGY)),  
(\*STRESS(PSYCHOLOGY), AVIATION MEDICINE), HEAT, NOISE,  
VIBRATION, PERFORMANCE(HUMAN), FLIGHT CREWS (U)

FLIGHT IN AIRCRAFT AND SPACE VEHICLES OFTEN EXPOSES  
CREW MEMBERS SIMULTANEOUSLY TO SEVERAL ENVIRONMENTAL  
STRESSES. THE EFFECTS OF SUCH COMBINED STRESSES  
CANNOT BE REALISTICALLY PREDICTED FROM SINGLE-STRESS  
STUDIES. TO BETTER UNDERSTAND COMBINED-STRESS  
EFFECTS, TEN MEN WERE EXPOSED TO HEAT (120F),  
NOISE (105 DB), AND VIBRATION (5 HZ, 0.30  
PEAK G) BOTH SINGLY AND IN COMBINATION.  
MEASUREMENTS WERE MADE OF TRACKING ABILITY,  
REACTION TIME, MENTAL ARITHMETIC, VISUAL ACUITY,  
VOICE COMMUNICATION, BODY TEMPERATURE, HEART RATE,  
WEIGHT LOSS, AND SUBJECTIVE RATINGS OF THE STRESS.  
ON NONE OF THE MEASURES WERE THE EFFECTS OF THE  
COMBINED-STRESS CONDITION MORE MARKED THAN THE EFFECT  
FROM THE SINGLE GREATEST STRESSOR. THERE WAS SOME  
EVIDENCE THAT THE COMBINED-STRESS CONDITION WAS  
ACTUALLY LESS DISTURBING TO THE SUBJECTS AND THEIR  
PERFORMANCE THAN WAS VIBRATION ALONE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 734 208 6/19  
LOVELACE FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH  
ALBUQUERQUE N MEX

THE BIODYNAMICS OF AIRBLAST, (U)

JUL 71 129P WHITE, CLAYTON S. ; JONES,  
ROBERT K. ; DAMON, EDWARD G. ; FLETCHER, E.  
ROYCE ; RICHMOND, DONALD R. ;  
CONTRACT: DASA01-70-C-0075  
PROJ: DNA-NWER-XAXM  
TASK: A012  
MONITOR: DNA 2738T

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE SYMPOSIUM ON  
LINEAR ACCELERATION OF THE IMPACT TYPE HELD IN  
PORTO (PORTUGAL) ON 23-26 JUN 71.

DESCRIPTORS: (\*STRESS (PHYSIOLOGY), \*BLAST), IMPACT,  
PRESSURE, BAROMETRIC PRESSURE, ACCELERATION TOLERANCE,  
HEMORRHAGE, PHYSIOLOGY, CARDIOVASCULAR SYSTEM,  
RESPIRATORY SYSTEM, KIDNEYS, HEMATOLOGY, GAS EMBOLISM,  
BIOPHYSICS (U)  
IDENTIFIERS: AERIAL EXPLOSIONS, \*BIODYNAMICS (U)

AFTER POINTING OUT THAT ACCELERATIVE AND  
DECELERATIVE EVENTS ARE ASSOCIATED WITH THE DIRECT  
(PRESSURE) AND INDIRECT (TRANSLATIONAL EVENTS  
INCLUDING PENETRATING AND NONPENETRATING DEBRIS AND  
WHOLE-BODY IMPACT) EFFECTS OF EXPOSURE TO BLAST-  
INDUCED WINDS AND PRESSURE VARIATIONS, SOME OF THE  
RELEVANT BIOPHYSICAL PARAMETERS WERE SELECTIVELY  
NOTED AND DISCUSSED. THESE INCLUDED THE PRESSURE-  
TIME RELATIONSHIP; SPECIES DIFFERENCES; AMBIENT  
PRESSURE EFFECTS; THE SIGNIFICANCE OF POSITIONAL  
(ORIENTATIONAL) AND GEOMETRIC (SITUATIONAL)  
FACTORS AS THEY INFLUENCE THE WAVE FORM, THE PRESSURE  
'DOSE' AND THE BIOLOGIC RESPONSE; AND DATA BEARING  
UPON THE ETIOLOGY OF BLAST INJURY. THE CONSEQUENCES  
OF PRESSURE-INDUCED VIOLENT IMPLOSION OF THE BODY  
WALL AND THE SIGNIFICANCE OF THE ASSOCIATED  
VARIATIONS IN THE INTERNAL GAS AND FLUID PRESSURES  
WERE DESCRIBED AND EMPHASIZED AS WERE ALTERNATING  
PHASES OF 'FORCED' HEMORRHAGE AND ARTERIAL AIR  
EMBOLIZATION, FIBRIN THROMBI, COAGULATION ANOMALIES  
AND RENAL, CARDIAC, AND PULMONARY SEQUELAE.  
TENTATIVE BIOMEDICAL CRITERIA CONSISTENT WITH  
RECENT INTERSPECIES SCALING AND MODELING STUDIES FOR  
ASSESSING PRIMARY BLAST HAZARDS WERE PRESENTED.  
(AUTHOR)

AD-A041 600

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION. NOISE POLLUTION-NOISE EFFECTS ON HUMAN--ETC(U)  
JUN 77

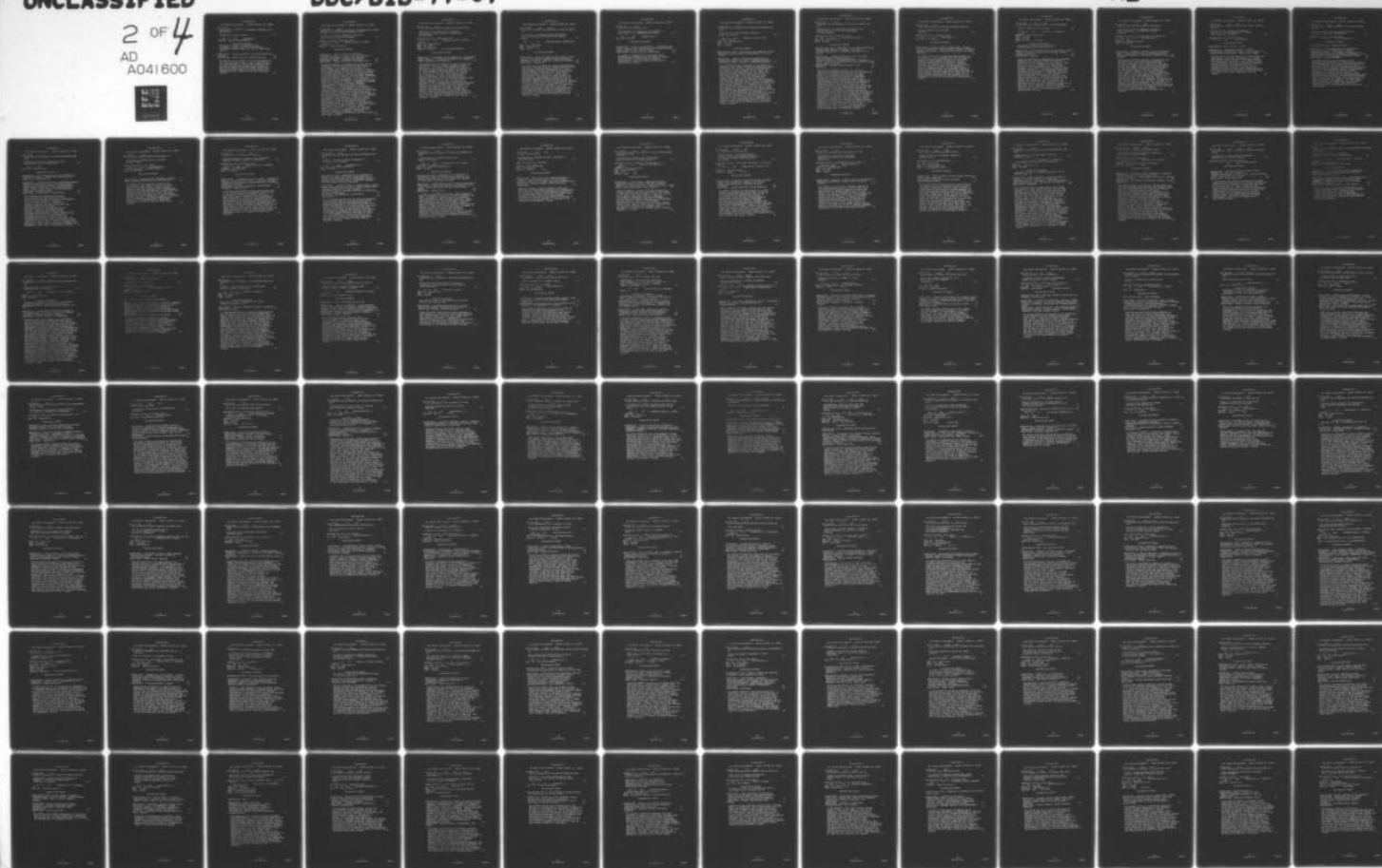
F/G 6/19

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DDC/BIB-77-07

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 734 704 20/1  
MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF  
ELECTRONICS

PRINCIPLES OF NOISE CONTROL,

(U)

AUG 71 10P INGARD, UNO ;  
CONTRACT: N00014-67-A-0204-0019

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN PROCEEDINGS 1971  
INTER-SOCIETY ENERGY CONVERSION ENGINEERING  
CONFERENCE, BOSTON, MASS., 3-6 AUG 71, P1034-1040,  
AUG 71.

DESCRIPTORS: (\*NOISE, CONTROL), REACTION(PSYCHOLOGY),  
SOURCES (U)

IDENTIFIERS: NOISE POLLUTION, \*NOISE REDUCTION (U)

THE PURPOSE OF THIS PAPER IS TO GIVE AN OVERVIEW OF  
THE FIELD OF NOISE CONTROL. AFTER A DISCUSSION OF  
THE HUMAN RESPONSE TO NOISE, SOME RELATED CRITERIA  
AND NOISE REGULATIONS ARE DESCRIBED. METHODS OF  
CONTROLLING NOISE ARE REVIEWED, AND VARIOUS NOISE  
REDUCTION MEASURES BASED ON ALTERING SOURCE AND  
TRANSMISSION PATH CHARACTERISTICS ARE CONSIDERED.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 734 932 6/19  
FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY  
BETHESDA MD LIFE SCIENCES RESEARCH OFFICE

A REVIEW OF ADVERSE BIOMEDICAL EFFECTS OF  
SOUND IN THE MILITARY ENVIRONMENT.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
DEC 71 107P CARR, C. JELLEFF & FISHER,  
KENNETH D. ;  
CONTRACT: DAHC19-71-C-0011

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, MILITARY PERSONNEL),  
(\*STRESS(PHYSIOLOGY), NOISE), MILITARY MEDICINE,  
DEAFNESS, ENVIRONMENT, PROTECTION, HEARING,  
PERFORMANCE(HUMAN), THRESHOLDS(PHYSIOLOGY) (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*NOISE REDUCTION (U)

THE REPORT PROVIDES A COMPREHENSIVE REVIEW OF THE  
ADVERSE EFFECTS OF SOUND ON MAN IN THE MILITARY  
ENVIRONMENT. THE DIVERSITY AND COMPLEXITY OF  
ARMY SYSTEMS THAT OVEREXPOSE THE SOLDIER TO NOISE  
HAVE CAUSED CONCERN FOR HIS HEALTH AND HIS CAPABILITY  
TO PERFORM EFFICIENTLY. DESPITE THE RECOGNITION OF  
THE DELETERIOUS EFFECTS OF NOISE EXPOSURE, PROBLEMS  
WITH NOISE-INDUCED HEARING LOSS AND HUMAN PERFORMANCE  
DECREMENT CONTINUE TO ENLARGE. IT IS GENERALLY  
RECOGNIZED THAT OVEREXPOSURE TO HIGH-INTENSITY NOISE  
DURING A LIFETIME WILL RESULT IN PROGRESSIVE HEARING  
LOSS. THERE IS NO WAY TO CORRECT PERMANENT  
THRESHOLD SHIFT; PERMANENT HEARING LOSS IS  
IRREVERSIBLE. IT IS NOT POSSIBLE AT THE PRESENT  
TIME TO IDENTIFY AUDIOMETRICALLY INDIVIDUALS WITH  
INCREASED SUSCEPTIBILITY OR RESISTANCE TO INJURY FROM  
NOISE EXPOSURE. PROTECTION BY SOUND ATTENUATING  
DEVICES, SUCH AS EARPLUGS OR EARMUFFS, HAS PROVED TO  
BE THE MOST PRACTICAL WAY TO PROTECT AND TO CONSERVE  
THE HEARING OF MEN REQUIRED TO WORK IN A NOISY  
ENVIRONMENT. EFFECTIVE HEARING CONSERVATION AND  
REDUCTION OF NOISE-INDUCED HEARING LOSS ARE  
COMPROMISED BY LACK OF ADHERENCE TO EXISTING ARMY  
REGULATIONS AND FREQUENT WAIVING OF EQUIPMENT DESIGN  
STANDARDS. WORK SHOULD BE DIRECTED TOWARD  
REDUCTION OF NOISE AT ITS SOURCE; AND, EMPHASIS  
SHOULD BE PLACED ON INCREASED SUPPORT FOR ARMY  
HEARING CONSERVATION PROGRAMS. THE REPORT  
IDENTIFIES RESEARCH OPPORTUNITIES THAT ARE RELATED TO  
ARMY NEEDS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 737 207 6/19  
NAVAL SUBMARINE MEDICAL RESEARCH LAB GROTON CONN

REDUCTION IN AUDIOGRAM SHIFTS IN SONAR  
WATCHSTANDERS WHEN EXPOSED TO SURFACE SHIP  
ECHO-RANGING. (U)

DESCRIPTIVE NOTE: MEMORANDUM REPT.,  
MAY 71 14P HARRIS, J. DONALD ; LACROIX,  
PAUL G. ;  
REPT. NO. NSMRL-MR-71-4  
PROJ: MF12.524  
TASK: MF12.524.004  
MONITOR: NAVMED MF12.524.004-9010D-12

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DEAFNESS, SONAR PERSONNEL), (\*AUDIOMETRY,  
SONAR PERSONNEL), SUBMARINE PERSONNEL, ECHO RANGING,  
NOISE, HEARING, EAR, PROTECTION (U)

AUDIOGRAMS COLLECTED UNDERWAY ON SONAR TECHNICIANS  
ON USS GATO (SSN 615) DURING EXPOSURE TO ECHO-  
RANGING 19 - 31 JANUARY 1971 SHOWED THAT SPLS IN  
THE SONAR HEADSETS MAY BE HAZARDOUS TO HEARING. TWO  
OF THREE HEADSETS WERE MODIFIED BY NUSC/NLON SO  
AS TO LIMIT THE PEAK SPLS DELIVERED TO THE EAR.  
ON A CRUISE 21 - 31 MARCH 1971, DURING WHICH  
LIGHT TO MODERATELY HEAVY ECHO-RANGING WAS  
ENCOUNTERED, 6 MEN USING AN UNMODIFIED HEADSET, WERE  
EXPOSED TO SPLS UP TO 118 DB. IN HALF THE 12  
EARS A TEMPORARY HEARING LOSS WAS FOUND WHICH  
EXCEEDED A WIDELY-DISSEMINATED DAMAGE-RISK CRITERION.  
HOWEVER, OF 6 MEN WHO USED MODIFIED HEADSETS, NO  
AVERAGE LOSS WHATEVER WAS FOUND, AND ONLY 1 EAR  
SLIGHTLY EXCEEDED THE CRITERION. WHETHER THE  
MODIFICATION INTRODUCED ON THIS OCCASION WAS AN  
OPTIMAL COMPROMISE BETWEEN PROTECTING THE EARS VS  
OBTAINING ALL POSSIBLE INFORMATION FROM THE SEA, IS  
STILL AN OPEN QUESTION. FURTHER STUDIES ARE IN  
PROGRESS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTRQL NO. /ZOM07

AD- 737 643 6/5 6/16  
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA  
MD

THE POSITION OF EARDRUM RUPTURE AND HEARING  
LOSS IN THE SCALE OF INJURIES FROM NUCLEAR  
BLAST,

(U)

FEB 72 36P GESSWEIN, JOSEPH I CORRAO, PAUL

;  
REPT. NO. NSRDC-3789  
PROJ: SF35.451.101  
TASK: 01817

UNCLASSIFIED REPORT

DESCRIPTORS: (•HEARING, •NUCLEAR EXPLOSIONS), (•EAR,  
NUCLEAR EXPLOSIONS), DEAFNESS, BLAST, PATHOLOGY,  
PRESSURE, WOUNDS AND INJURIES, PROTECTION, HAZARDS (U)  
IDENTIFIERS: MIDDLE EAR (U)

THE SCANTY DATA AVAILABLE ON HUMAN EARDRUM RUPTURE  
FROM BLAST PRESSURE SUGGEST A NORMAL DISTRIBUTION OF  
RUPTURE ABOUT A MEDIAN OVERPRESSURE OF 15 PSI.  
MORE ABUNDANT DATA ARE AVAILABLE ON BLAST-INDUCED  
EARDRUM RUPTURE IN ANIMALS, BUT THEIR VALUE IS  
LIMITED BECAUSE OF THE LACK OF SCALING LAWS.  
CONSEQUENTLY, PREDICTIONS FOR HUMAN INJURY STEM  
FROM CLINICAL EXPERIENCES. AS AN INJURY MODE TO  
SHIPBOARD PERSONNEL, EARDRUM RUPTURE WILL BE OF  
SECONDARY IMPORTANCE TO OTHER BLAST-INDUCED INJURIES.  
IN FACT, RUPTURE ITSELF MAY BE BENEFICIAL TO THE  
INDIVIDUAL BY PREVENTING DAMAGE TO THE MIDDLE EAR.  
HOWEVER, HEARING LOSS ASSOCIATED WITH BLAST  
PRESSURE OR RUPTURE ITSELF WILL COMPROMISE NORMAL  
VOICE COMMUNICATION. ALTHOUGH EAR PROTECTION IS  
ADVISABLE, IT SHOULD BE MADE AVAILABLE ONLY IN  
CONJUNCTION WITH PROTECTION AGAINST OTHER BLAST  
EFFECTS. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 737 684 20/1  
RAND CORP SANTA MONICA CALIF

THE MECHANICS OF FORECASTING THE COMMUNITY  
NOISE IMPACT OF A TRANSPORTATION SYSTEM,

(U)

NOV 71 20P GEBMAN, JEAN R. ;  
REPT. NO. P-4735

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, \*ENVIRONMENT), (\*TRANSPORTATION,  
NOISE), PREDICTIONS, URBAN PLANNING, DECISION MAKING,  
PUBLIC OPINION, REACTION(PSYCHOLOGY) (U)  
IDENTIFIERS: NOISE POLLUTION, COMMUNITIES (U)

AN OVERVIEW IS PRESENTED OF THE NOISE IMPACT  
ASSESSMENT METHODOLOGY BEING DEVELOPED TO ASSIST  
POLICY MAKERS IN EVALUATING THE POTENTIAL  
ENVIRONMENTAL IMPACT OF FUTURE TRANSPORTATION  
ALTERNATIVES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 737 826 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

THE EFFECTS OF HIGH INTENSITY NOISE ON  
HUMAN EQUILIBRIUM,

(U)

DEC 71 24P HARRIS, C. STANLEY ; VON  
GIERKE, HENNING E. ;  
REPT. NO. AMRL-TR-67-41  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AEROSPACE MEDICAL  
ASSOCIATION MEETING HELD AT WASHINGTON, D. C., ON  
APR 67.

DESCRIPTORS: (\*NOISE, \*EQUILIBRIUM(PHYSIOLOGY)),  
(\*VESTIBULAR APPARATUS, NOISE), STRESS(PHYSIOLOGY),  
PERFORMANCE(HUMAN), INTENSITY, EXPOSURE(PHYSIOLOGY) (U)

FIVE EXPERIMENTS WERE CONDUCTED ON THE EFFECTS OF  
BROADBAND, HIGH INTENSITY NOISE ON HUMAN EQUILIBRIUM.  
THE ABILITY OF SUBJECT TO BALANCE ON NARROW RAILS  
WAS MEASURED DURING EXPOSURE TO THE NOISE; AND  
IMMEDIATELY AFTER TERMINATION OF THE NOISE. FOUR  
DIFFERENT NOISE CONDITIONS WERE USED IN EACH  
EXPERIMENT: CONTROL, 120, 130, AND 140 DB (RE.  
0.0002 DYNE/SQ CM). IN THE FIRST EXPERIMENT  
SUBJECTS WORE EARMUFFS AND EARPLUGS; IN THE SECOND,  
ONLY EARPLUGS WERE WORN; AND IN THE THIRD EXPERIMENT,  
SUBJECTS WORE EARPLUGS AND ONE EARMUFF TO PRODUCE AN  
ASYMMETRICAL EXPOSURE. AT AN AMBIENT LEVEL OF 140  
DB, A DETRIMENTAL EFFECT WAS OBTAINED IN ALL THREE  
EXPERIMENTS. AT LOWER INTENSITIES OF NOISE, THERE  
WERE PERFORMANCE DECREMENTS ONLY FOR THE ASYMMETRICAL  
EXPOSURE. IN THE REMAINING TWO EXPERIMENTS,  
CONDUCTED AFTER TERMINATION OF THE NOISE, DETRIMENTAL  
EFFECTS WERE OBTAINED FOR ASYMMETRICAL AUDITORY  
EXPOSURE BUT NOT FOR EQUAL AUDITORY EXPOSURE. THE  
RESULTS OF THESE EXPERIMENTS ARE INTERPRETED AS A  
POSSIBLE QUANTITATIVE DEMONSTRATION OF THE DIRECT  
EFFECT OF HIGH INTENSITY NOISE ON THE VESTIBULAR  
SYSTEM. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 737 827 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

PHYSIOLOGICAL AND PERFORMANCE EFFECTS ON THE  
AIRCREW DURING LOW-ALTITUDE HIGH-SPEED  
FLIGHT MISSIONS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
NOV 71 43P VON GIERKE, HENNING E. ;  
REPT. NO. AMRL-TR-70-67  
PROJ: AF-7231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AGARD GUIDANCE AND  
CONTROL PANEL MEETING ON LOW-ALTITUDE FLIGHT  
CONTROL PROBLEMS HELD IN BRUSSELS (BELGIUM) ON 1-3  
SEP 70.

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), \*LOW ALTITUDE),  
(\*FLIGHT SPEEDS, STRESS(PHYSIOLOGY)),  
STRESS(PSYCHOLOGY), PERFORMANCE(HUMAN), VIBRATION,  
NOISE, PILOTS, FATIGUE(PHYSIOLOGY), MAN MACHINE SYSTEMS,  
VISION, MOTOR REACTIONS (U)

IDENTIFIERS: \*FLIGHT, \*HIGH VELOCITY, \*LOW  
ALTITUDE (U)

OPERATIONAL EXPERIENCE AS WELL AS FLIGHT AND  
SIMULATOR EXPERIMENTS INDICATE THAT LOW ALTITUDE HIGH  
SPEED FLYING CONSTITUTES A NONSPECIFIC STRESS  
RESULTING IN ADVERSE PHYSIOLOGICAL RESPONSES,  
CUMULATIVE FATIGUE AND POTENTIALLY DETRIMENTAL  
EFFECTS ON SELECTED PERFORMANCE CAPABILITIES.  
PSYCHOLOGICAL MISSION STRESS AND PILOT WORKLOAD ARE  
HARD TO SEPARATE FROM THE COMBINATION OF PHYSICAL  
STRESSORS, SUCH AS BUFFETING, NOISE, AND HEAT.  
RECENT STUDIES ON THE COMBINED EFFECTS OF NOISE AND  
VIBRATION ON VISUAL AND PSYCHOMOTOR PERFORMANCE WILL  
BE REVIEWED. AS GUIDANCE FOR THE EVALUATION OF  
OPERATIONAL SITUATIONS THE PROPOSED INTERNATIONAL  
STANDARD FOR THE EVALUATION OF VIBRATION ENVIRONMENTS  
WITH RESPECT TO HEALTH, PILOT PERFORMANCE, FATIGUE,  
AND COMFORT IS REVIEWED. RESEARCH GOALS OF ONGOING  
PROGRAMS IN SEVERAL COUNTRIES ARE DIRECTED TOWARD  
REDUCING ENVIRONMENTAL STRESSES AND TOWARD REFINING  
GUIDELINES WITH RESPECT TO HUMAN PSYCHO-PHYSIOLOGICAL  
RESPONSES TO THESE STRESSORS. PROMISING NEW  
APPROACHES APPEAR TO REST IN THE APPLICATION OF  
MODERN CONTROL THEORY TO DESCRIBE MAN-MACHINE  
EFFECTIVENESS UNDER ENVIRONMENTAL STRESS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 738 135 5/5  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

IMPROVED WEAPON NOISE EXPOSURE  
CRITERIA.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,  
FEB 72 19P HODGE, DAVID C. I  
REPT. NO. HEL-TN-1-72

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NOISE, MILITARY OPERATIONS), (\*HUMAN  
FACTORS ENGINEERING, NOISE), WEAPONS, HEARING, DEAFNESS,  
EXPOSURE(PHYSIOLOGY), THRESHOLDS(PHYSIOLOGY), MILITARY  
PERSONNEL (U)

THE STATE OF THE ART IN NOISE-EXPOSURE CRITERIA IS  
REVIEWED AND IT IS SUGGESTED THAT SUCH CRITERIA ARE  
IN NEED OF REVISION AND EXTENSION TO MEET FUTURE  
OPERATIONAL REQUIREMENTS OF THE ARMY. FURTHER,  
EXISTING NOISE CRITERIA, EXPRESSED IN TERMS OF  
'DECIBELS OF HEARING LOSS,' SHOULD BE RE-STATED IN  
TERMS OF PREDICTIONS ABOUT THE PERFORMANCE OF  
MILITARY PERSONNEL AFTER THEY HAVE BEEN EXPOSED TO  
NOISE. SUCH RE-STATEMENT IN PERFORMANCE TERMS WILL  
SIGNIFICANTLY IMPROVE COMMUNICATION ABOUT THE RISK OF  
NOISE EXPOSURE TO PEOPLE WHO ARE IN A POSITION TO  
UTILIZE SUCH INFORMATION BUT WHO GENERALLY DO NOT  
COMPREHEND THE NOTATION OF DECIBELS OF HEARING LOSS.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 739 288 6/5 6/16  
OHIO STATE UNIV COLUMBUS DEPT OF OTOLARYNGOLOGY

ACOUSTIC DAMAGE OF THE COCHLEA,

(U)

APR 71 13P LIM, DAVID J. ; MELNICK,  
WILLIAM ;  
CONTRACT: F33615-69-C-1360  
PROJ: AF-7231  
TASK: 723102  
MONITOR: AMRL TR-71-46

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN THE ARCHIVES OF  
OTOLARYNGOLOGY, V94 P294-305 OCT 71.

DESCRIPTORS: (\*OTORHINOLARYNGOLOGY, ACOUSTICS), (\*EAR,  
NOISE), PATHOLOGY, SENSE ORGANS, HEARING, DAMAGE,  
SENSES (PHYSIOLOGY)

(U)

IDENTIFIERS: \*COCHLEA

(U)

THIRTY GUINEA PIGS, 15 EXPERIMENTAL AND 15 CONTROL,  
EXPOSED TO TWO DIFFERENT NOISES WITH OCTAVE  
BANDWIDTHS OF 300 TO 600 HERTZ AND 1,000 TO 2,000  
HZ AT 117 DB SPL. EXPOSURE TIME VARIED FROM  
FOUR TO 24 HOURS. PROGRESSION IN THE EXTENT OF  
CHANGES IN THE SENSORY CELLS AS A RESULT OF NOISE  
EXPOSURE INVOLVED: (1) AN INCREASE IN FORMATION  
OF BLEBS ON THE SURFACE OF THE SENSORY HAIRS; (2)  
VESICULATION PROCEEDING TO VACUOLIZATION OF THE  
SMOOTH ENDOPLASMIC RETICULUM (ER) SYSTEM; (3)  
HEAVY ACCUMULATION OF LYSOSOMAL GRANULES IN THE  
SUBCUTICULAR REGION; (4) CUTICULAR PLATES OF THE  
SENSORY CELLS DEFORMED; AND (5) EVENTUAL CELL  
RUPTURE AND LYSIS. THE SPACE OCCUPIED BY THE  
DESTROYED SENSORY CELL WAS IMMEDIATELY SEALED OFF BY  
THE DEITER CELL PROCESSES. THE NERVE ENDINGS  
IMPINGING ON THE HAIR CELL BODIES DID NOT SHOW AND  
GREAT CHANGES EXCEPT FOR OCCASIONAL MYELIN  
DEGENERATION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 739 368 6/19 5/10  
MEMPHIS STATE UNIV TENN DEPT OF PSYCHOLOGY

CONVENTIONAL AND HIGH FREQUENCY HEARING OF  
NAVAL AIRCREWMEN AS A FUNCTION OF NOISE  
EXPOSURE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. MAY 71-MAR 72,  
APR 72 13P FLETCHER, JOHN L. ;  
REPT. NO. HRL/1  
CONTRACT: N00014-71-C-0354  
PROJ: NR-197-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEARING, AIRCRAFT NOISE), (\*AIRCRAFT  
NOISE, FLIGHT CREWS), NOISE, EXPOSURE(PHYSIOLOGY),  
THRESHOLDS(PHYSIOLOGY), AUDIOMETRY, HAZARDS, PILOTS, JET  
AIRCRAFT (U)

CONVENTIONAL AND HIGH FREQUENCY AUDIOGRAMS FOR US  
NAVY PROP, JET, AND ROTARY WING PILOTS WERE  
OBTAINED AND PLOTTED AS A FUNCTION OF AMOUNT OF  
FLIGHT TIME LOGGED. LACK OF SUFFICIENT AUDIOGRAMS  
OF PROP AND ROTARY PILOTS RESTRICTS DISCUSSION OF  
THE RELATIVE HAZARD TO HEARING OF PROP, ROTARY,  
AND JET FLIGHT. HOWEVER, FOR JET AIRCREWMEN,  
LOSSES APPEAR TO BEGIN AT THE HIGHER FREQUENCIES  
I.E., ABOVE 6 KHZ, AND ERODE WITH CUMULATIVE FLIGHT  
TIME DOWN TO THE LOWER FREQUENCIES. PERCENT OF  
PERSONS DETECTING THE HIGH FREQUENCY SIGNALS IS A  
MORE PRECISE INDEX OF THE PROGRESSION OF HEARING LOSS  
THAN IS MEAN HEARING LEVEL, PRIMARILY BECAUSE OF AN  
ARTIFACT IN SCORING AUDIOGRAMS. DATA COLLECTION OF  
AIRCREW CANDIDATES PRE-TRAINING, DURING TRAINING, AND  
POST-PRIMARY HEARING ARE CONCURRENTLY BEING COLLECTED  
BY US NAVY AEROSPACE MEDICAL RESEARCH  
INSTITUTE (NAMI) PERSONNEL AT PENSACOLA NAS.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 739 432 5/10 5/5  
ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING  
CENTER

THE EFFECTS OF COMBINED ENVIRONMENTAL  
FACTORS ON HUMAN PERFORMANCE OF A MANUAL  
TASK: NOISE AND TEMPERATURE.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,  
MAY 71 35P LEWIS, ROBERT P. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (\*PERFORMANCE(HUMAN), \*NOISE),  
(\*TEMPERATURE, PERFORMANCE(HUMAN)), MAINTAINABILITY,  
HUMAN FACTORS ENGINEERING, INTERACTIONS, THESES (U)

THE EFFECTS OF TWO ENVIRONMENTAL FACTORS, NOISE AND  
TEMPERATURE, UPON HUMAN PERFORMANCE OF A SIMPLE,  
WELL-LEARNED MANUAL DEXTERITY TASK WERE EXAMINED.  
THE EXPERIMENTAL DESIGN WAS A 2X2 FACTORIAL, USING  
TWELVE SUBJECTS. THE DATA OBTAINED FROM SCORES ON  
A PURDUE PEGBOARD TASK WERE ANALYZED IN A  
RANDOMIZED BLOCK, BY MEANS OF AN ANALYSIS OF  
VARIANCE. RESULTS INDICATED THAT TEMPERATURE HAD A  
SIGNIFICANT EFFECT ON PERFORMANCE, WHILE NOISE AND  
THE TEMPERATURE X NOISE INTERACTION DID NOT.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 739 474 5/10 5/5  
ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING  
CENTER

A STUDY OF THE EFFECTS OF ILLUMINATION AND  
NOISE ON SIMPLE MOTOR PERFORMANCE.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,  
71 32P GARDINIER, CAROL A. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (•MOTOR REACTIONS, PSYCHOPHYSICS),  
(•ILLUMINATION, MOTOR REACTIONS), (•NOISE,  
PERFORMANCE(HUMAN)), MAINTENANCE PERSONNEL, TEST  
CONSTRUCTION(PSYCHOLOGY), PERSONNEL MANAGEMENT, COST  
EFFECTIVENESS, HUMAN FACTORS ENGINEERING, THESES  
IDENTIFIERS: TASK PERFORMANCE

(U)

(U)

THE PAPER INVESTIGATES THE EFFECTS OF TWO  
ENVIRONMENTAL PARAMETERS, ILLUMINATION AND NOISE, ON  
HUMAN PERFORMANCE. WHILE MANY SINGLE-FACTOR STUDIES  
HAVE BEEN MADE ON BOTH ILLUMINATION AND NOISE,  
RELATIVELY LITTLE RESEARCH HAS BEEN DONE TO DETERMINE  
MULTI-FACTOR ENVIRONMENTAL EFFECTS ON PERFORMANCE.  
STUDIES OF THE COMBINED EFFECTS OF VARIOUS  
ENVIRONMENTAL FACTORS WOULD BE USEFUL TO BOTH  
GOVERNMENT AND INDUSTRY IN THE MAINTENANCE AREA, SUCH  
AS FOR OBTAINING ACCURATE ESTIMATES FOR MAINTENANCE  
TASK TIMES AND REPAIR TIMES. IN AN ORGANIZATION AS  
LARGE AS THE ARMY, FOR EXAMPLE, THIS COULD RESULT  
IN A SIGNIFICANT COST REDUCTION. IN THIS STUDY,  
SUBJECTS PERFORMED A MANUAL TASK UNDER FOUR  
CONDITIONS OF ILLUMINATION AND NOISE. THE RESULTS  
ARE REPORTED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 739 501 6/2  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

SYMPOSIUM ON BIODYNAMIC MODELS AND THEIR  
APPLICATIONS, 26-28 OCTOBER 1970.

(U)

DEC 71 962P  
REPT. NO. AMRL-TR-71-29

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PROCEEDINGS OF THE SYMPOSIUM ON  
BIODYNAMIC MODELS AND THEIR APPLICATIONS HELD IN  
DAYTON, OHIO, 26-28 OCT 70.

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), \*ANATOMICAL MODELS),  
SYMPOSIA, MODELS(SIMULATIONS), RESPONSE(BIOLOGY),  
MECHANICAL PROPERTIES, STRESSES, TISSUES(BIOLOGY),  
BONES, TENSILE PROPERTIES, TOLERANCES(PHYSIOLOGY),  
BLAST, IMPACT, CRASH INJURIES, SHOCK(MECHANICS),  
VIBRATION, PERFORMANCE(HUMAN)  
IDENTIFIERS: \*BIOMECHANICS, \*BIODYNAMICS

(U)

(U)

THE SYMPOSIUM ON BIODYNAMICS MODELS AND  
THEIR APPLICATIONS TOOK PLACE IN DAYTON,  
OHIO, ON 26-28 OCTOBER 1970 UNDER THE SPONSORSHIP  
OF THE NATIONAL ACADEMY OF SCIENCES -  
NATIONAL RESEARCH COUNCIL, COMMITTEE ON  
HEARING, BIOACOUSTICS, AND BIOMECHANICS; THE  
NATIONAL AERONAUTICS AND SPACE  
ADMINISTRATION; AND THE AEROSPACE MEDICAL  
RESEARCH LABORATORY, AEROSPACE MEDICAL  
DIVISION, UNITED STATES AIR FORCE. MOST  
TECHNICAL AREAS DISCUSSED INCLUDED APPLICATION OF  
BIODYNAMIC MODELS FOR THE ESTABLISHMENT OF  
ENVIRONMENTAL EXPOSURE LIMITS, MODELS FOR  
INTERPRETATION OF ANIMAL, DUMMY, AND OPERATIONAL  
EXPERIMENTS, MECHANICAL CHARACTERIZATION OF LIVING  
TISSUE AND ISOLATED ORGANS, MODELS TO DESCRIBE MAN'S  
RESPONSE TO IMPACT, BLAST, AND ACOUSTIC ENERGY, AND  
PERFORMANCE IN BIODYNAMIC ENVIRONMENTS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 739 931 6/16  
WALTER REED GENERAL HOSPITAL WASHINGTON D C

THE EXTENT OF HEARING LOSS IN THE ARMY;  
A SURVEY REPORT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 71 55P WALDEN, BRIAN E. I  
WORTHINGTON, DON W. ; MCCURDY, HARRY W. I  
PROJ: DA-71-P-08

UNCLASSIFIED REPORT

DESCRIPTORS: (DEAFNESS, ARMY PERSONNEL); HEARING,  
NOISE, HAZARDS, PROTECTION, MILITARY MEDICINE

(U)

THE PURPOSE OF THE STUDY WAS TO SURVEY THE  
INCIDENCE OF NOISE-INDUCED HEARING LOSS AMONG  
UNITED STATES ARMY TROOPS. ACCURATE HEARING  
THRESHOLD DATA WERE OBTAINED FROM A HETEROGENOUS  
SAMPLE OF 2726 MEN REPRESENTING DIFFERENT BRANCHES  
AND LENGTHS OF TIME OF ACTIVE DUTY. THE STUDY  
PROVIDES EVIDENCE SUGGESTING THAT NOISE-INDUCED  
HEARING LOSS IS THE NUMBER ONE HAZARD TO THE HEALTH  
OF ARMY PERSONNEL. THE REPORT SUMMARIZES THE  
MAGNITUDE OF THE PROBLEM AMONG CAREER ARMY  
PERSONNEL WITH OVER 10 YEARS ON ACTIVE DUTY.  
(AUTHOR)

(U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 740 227 6/19 20/1  
CENTRAL INST FOR THE DEAF ST LOUIS MO

ELECTROPHYSIOLOGICAL CORRELATES OF BEHAVIORAL  
TEMPORARY THRESHOLD SHIFTS IN CHINCHILLA. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
FEB 72 27P BENITEZ, LUIS D. IELDREDGE,  
DONALD H. IEMPLER, JERRY W. I  
CONTRACT: NONR-4327(00)  
PROJ: NR-140-170

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), NOISE), (\*LABORATORY  
ANIMALS, THRESHOLDS(PHYSIOLOGY)), BEHAVIOR, AUDITORY  
PERCEPTION, EAR, RODENTS, ELECTROPHYSIOLOGY, FREQUENCY,  
INTENSITY, RECOVERY (U)  
IDENTIFIERS: AUDITORY THRESHOLDS, \*CHINCHILLAS,  
TEMPORARY THRESHOLD SHIFTS (U)

A PREVIOUS TEST EXPOSED CHINCHILLAS FOR SEVEN DAYS  
TO AN OCTAVE BAND OF NOISE CENTERED AT 500 HZ AND  
AT 95 DB SPL TO PRODUCE TEMPORARY SHIFTS OF  
BEHAVIORAL AUDITORY THRESHOLDS WHICH REQUIRED 4-7  
DAYS TO RECOVER TO NORMAL. IN THE PRESENT STUDY  
PHYSIOLOGICAL POTENTIALS WERE MEASURED ABOUT 5, 24,  
AND 48 HOURS AFTER EXPOSURES TO THE SAME NOISE FOR 2  
OR 3 DAYS. COCHLEAR MICROPHONIC RESPONSES AND DC  
ENDOCOCHLEAR POTENTIALS WERE MEASURED IN EACH OF THE  
THREE COCHLEAR TURNS. INPUT-OUTPUT FUNCTIONS FOR  
WHOLE-NERVE ACTION POTENTIAL RESPONSES TO CLICKS AND  
VISUAL DETECTION LEVELS FOR EARLY AVERAGED EVOKED  
RESPONSES ARISING IN THE BRAIN STEM WERE ALSO  
MEASURED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 740 438 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

A MODEL TO SIMULATE THORACIC RESPONSES TO  
AIR BLAST AND TO IMPACT,

(U)

DEC 71 45P FLETCHER, E. R. ;  
REPT. NO. AMRL-TR-71-29-PAPER-1  
PROJ: AF-7231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE SYMPOSIUM ON  
BIODYNAMICS MODELS AND THEIR APPLICATIONS HELD AT  
DAYTON, OHIO, ON 26-28 OCT 70. SPONSORED IN PART BY  
DEFENSE ATOMIC SUPPORT AGENCY. PAPER ALSO INCLUDED  
IN AD-739 501, PC \$11.00, MF \$0.95.

DESCRIPTORS: (\*THORAX, \*BLAST), (\*IMPACT SHOCK, THORAX),  
(\*MUSCULOSKELETAL SYSTEM, BLAST), MODELS(SIMULATIONS),  
MECHANICAL PROPERTIES, FLUID DYNAMICS,  
STRESS(PHYSIOLOGY), PRESSURE, BIOPHYSICS, WOUNDS AND  
INJURIES, PREDICTIONS (U)

IDENTIFIERS: \*ORTHOPEDICS, \*BIODYNAMICS,  
\*BIOMECHANICS (U)

A FLUID-MECHANICAL MODEL OF THE THORAX IS DESCRIBED  
WHICH HAS BEEN USEFUL IN EXPLAINING BIOPHYSICAL  
MECHANISMS AND SCALING PROCEDURES APPLICABLE IN  
ASSESSING RESPONSES OF THE THORAX ENERGIZED BY AIR-  
BLAST OVERPRESSURES OR BY NONPENETRATING MISSILES.  
METHODS OF PARAMETER ESTIMATION ARE DISCUSSED.  
COMPARISONS ARE MADE BETWEEN MEASURED AND COMPUTED  
INTRATHORACIC PRESSURES AND CHEST-WALL MOTIONS.  
THE TESTED MAMMALIAN SPECIES ARE SHOWN TO DIVIDE  
INTO TWO APPROXIMATELY SIMILAR GROUPS AND THE  
IMPLICATIONS OF THIS ARE DISCUSSED. SUGGESTIONS  
ARE MADE CONCERNING POSSIBLE FUTURE AREAS OF  
RESEARCH. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 740 445 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

A FIVE-DEGREE-OF-FREEDOM MATHEMATICAL  
MODEL OF THE BODY,

(U)

DEC 71 25P KALEPS,INTS IVON GIERKE,  
HENNING E. IWELS,E. B. I  
REPT. NO. AMRL-TR-71-29-PAPER-8  
PROJ: AF-7231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE SYMPOSIUM ON  
BIODYNAMICS MODELS AND THEIR APPLICATIONS HELD AT  
DAYTON, OHIO, ON 26-28 OCT 70. PAPER ALSO INCLUDED  
IN AD-739 501, PC \$11.00, MF \$0.95.

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), MODELS(SIMULATIONS)),  
HUMAN BODY, HUMANS, RESPONSE(BIOLOGY), THORAX, SPINAL  
COLUMN, BLAST, ACOUSTICS, STATICS, MATHEMATICAL  
MODELS

(U)

IDENTIFIERS: \*BIODYNAMICS

(U)

A LINEAR, FIVE-DEGREE-OF-FREEDOM, LUMPED PARAMETER  
MODEL IS PROPOSED TO SIMULATE THORACIC, ABDOMINAL AND  
SPINAL RESPONSE TO VARIOUS DYNAMIC ENVIRONMENTS.  
FIVE CHARACTERISTIC BODY SEGMENT MASSES ARE CHOSEN,  
CORRESPONDING TO THE PELVIS, ABDOMEN, TORSO, CHEST  
WALL AND RESPIRATORY GAS. THE EFFECTS OF BLAST,  
ACOUSTIC FIELDS, STEADY-STATE PRESSURE VARIATIONS AND  
MECHANICAL FORCES CAN BE SIMULATED WITH THE MODEL TO  
PROVIDE INSIGHT INTO ACTUAL BODY RESPONSE.  
RELATIONS ARE GIVEN FOR SCALING FROM OR TO  
GEOMETRICALLY SIMILAR ANIMALS AS A FUNCTION OF MASS.  
THE MODEL FORMULATION ALSO PROVIDES A BASIS FOR A  
SYSTEMATIC SET OF BIODYNAMIC EXPERIMENTS FOR MAN OR  
SIMILAR PRIMATE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 740 697 5/10 20/1  
TRACOR INC AUSTIN TEX

ENVIRONMENTAL INFLUENCE ON PUBLIC RESPONSE TO  
THE SONIC BOOM.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

72 47P

CONTRACT: DOT-FA70WA-2254

PROJ: FAA-253-011

MONITOR: FAA-NO 70-17

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SONIC BOOM, \*ATTITUDES(PSYCHOLOGY)),  
(\*PUBLIC OPINION, \*SONIC BOOM), JET PLANE NOISE,  
AIRPORTS, URBAN AREAS, NOISE, VEHICLES, TRANSPORTATION(U)  
IDENTIFIERS: \*NOISE EXPOSURE, \*NOISE POLLUTION,  
COMMUNITIES (U)

PREVIOUS STUDIES OF PUBLIC RESPONSE TO THE SONIC  
BOOM HAVE NOT CONSIDERED REACTIONS TO THE BOOM WITHIN  
THE CONTEXT OF THE CITY OR NEIGHBORHOOD ENVIRONMENT.  
DATA CONCERNING COMMUNITY REACTION TO AIRPORT NOISE  
IN ORDER TO STUDY THE EFFECT OF ENVIRONMENT  
CONDITIONS, BOTH PHYSICAL AND SOCIAL, ON RESPONSE TO  
THE BOOM. ATTITUDINAL RESPONSE IS AFFECTED BY THE  
RESPONDENT'S ENVIRONMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 742 819 6/19 18/3  
LOVELACE FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH  
ALBUQUERQUE N MEX

THE EFFECTS OF AIRBLAST ON DISCRIMINATED  
AVOIDANCE BEHAVIOR IN RHESUS MONKEYS. (U)

DESCRIPTIVE NOTE: TECHNICAL PROGRESS REPT.,  
MAR 71 41P BOGO,V. ;HUTTON,R. A. ;  
BRUNER,A. ;  
CONTRACT: DA-49-146-XZ-372  
PROJ: DASA-NWER-XAXM  
TASK: AD12  
MONITOR: DASA 2659

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHOCK WAVES, PERFORMANCE(HUMAN)),  
(\*NUCLEAR EXPLOSIONS, BLAST), BEHAVIOR, AUDITORY  
PERCEPTION, VISUAL PERCEPTION, STRESS(PHYSIOLOGY), SHOCK  
WAVES, NOISE, EXPERIMENTAL DATA, MONKEYS (U)

EIGHTEEN MONKEYS, TRAINED TO PERFORM AUDITORY AND  
VISUAL DISCRIMINATION AVOIDANCE TASKS, WERE EXPOSED  
TO REFLECTED SHOCK-TUBE AIRBLAST OF 30-, 40-, OR 50-  
P.S.I. RESULTS INDICATED THAT: (1) IMMEDIATE  
BUT TRANSIENT PERFORMANCE DECREMENT OCCURRED; (2)  
LATENCY WAS MORE AFFECTED THAN ACCURACY, PARTICULARLY  
FOR THE 50-P.S.I. GROUP; (3) PERFORMANCE  
DECREMENT WAS MILD AND RECOVERY TIME BRIEF (USUALLY  
UNDER 4 HOURS) DESPITE FRANK PHYSICAL INJURIES; AND  
(4) AUDITORY DISCRIMINATION UNDERWENT MORE  
DECREMENT THAN VISUAL, WITH EARDRUM INJURY OCCURRING  
FREQUENTLY. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 743 095 20/1 1/5  
IIT RESEARCH INST CHICAGO ILL

STUDY OF NOISE IN AIR ROUTE TRAFFIC  
CONTROL CENTER, FLIGHT SERVICE STATION,  
AIR TRAFFIC CONTROL TOWER AND REMOTE  
FACILITIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. ON PHASE I, 18 MAY-18  
NOV 71,

DEC 71 56P SEMMELINK, A. ; CLINCH, J. M.

;

CONTRACT: DOT-FA71W-2587

MONITOR: FAA-RD 72-47

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TERMINAL FLIGHT FACILITIES, \*AIRCRAFT  
NOISE), PSYCHOACOUSTICS, CONTROL, AIR TRAFFIC  
CONTROLLERS, PSYCHOLOGY, PERFORMANCE(HUMAN),  
STANDARDS

(U)

IDENTIFIERS: \*NOISE POLLUTION, \*NOISE REDUCTION

(U)

THE REPORT DESCRIBES THE DEVELOPMENT OF A NOISE  
STANDARD FOR PERMISSIBLE NOISE LEVELS IN FAA AIR  
TRAFFIC CONTROL AND NAVIGATIONAL FACILITIES.  
THE CONTENTS OF THE REPORT INCLUDE NOISE  
DEFINITIONS, THEORY OF SOUND, SOUND MEASURING  
INSTRUMENTATION, NOISE SURVEYS, REFERENCE  
PUBLICATIONS, AND NOISE CRITERIA. CRITERIA ARE  
GIVEN FOR NOISE ENVIRONMENTS WHICH PERMIT SAFE AND  
SATISFACTORY PERFORMANCE OF TASKS IN THE FOLLOWING  
FACILITIES: TRAFFIC CONTROL CENTERS, INCLUDING  
IMPORTANT COMMUNICATION AREAS; AIR TRAFFIC CONTROL  
TOWER CABS; FLIGHT SERVICE STATIONS AND REMOTE  
FACILITIES. CRITERIA FOR EACH OF THESE FACILITIES  
ARE DESCRIBED AND JUSTIFICATIONS FOR THE SELECTION OF  
NOISE CRITERIA ARE GIVEN. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 743 298 6/19  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

DEVELOPMENT OF REALISTIC A-WEIGHTED  
AUDITORY RISK CRITERIA FOR AEROSPACE  
OPERATIONS.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. NOV 70-AUG 71,  
DEC 71 22P GASAWAY, DONALD C. ;  
SUTHERLAND, HARRELL C. , JR;  
REPT. NO. SAM-TR-71-47  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: (HEARING, HAZARDS), EXPOSURE (PHYSIOLOGY),  
THRESHOLDS (PHYSIOLOGY), NOISE, IMPACT, AEROSPACE  
MEDICINE

(U)

THE AUTHORS HAVE PREVIOUSLY PROPOSED ADOPTION OF  
THE CHABA WORKING GROUP 46 CRITERION FOR STEADY-  
STATE NOISES TO ASSESS DEGREES OF AUDITORY RISK  
ASSOCIATED WITH AEROSPACE OPERATIONS. IN THIS  
REPORT, THE SALIENT FEATURES OF VARIOUS DAMAGE RISK  
CRITERIA ARE REVIEWED AND PRIMARY AND SECONDARY  
COMPROMISES ARE DISCUSSED. A SIMPLE CRITERION  
USING A-WEIGHTED SOUND LEVELS IS PROPOSED FOR  
BROAD-BAND AND NARROW-BAND STEADY-STATE AND  
INTERMITTENT NOISE AND FOR IMPACT NOISES. THE  
CRITERIA CONTAINED IN THIS REPORT PROVIDE GUIDANCE  
NEEDED TO IDENTIFY POTENTIALLY HAZARDOUS EXPOSURES  
ENCOUNTERED IN AEROSPACE OPERATIONS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 745 105 6/5 20/1  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

COCHLEAR PATHOLOGY IN MONKEYS EXPOSED TO  
IMPULSE NOISE. (U)

DESCRIPTIVE NOTE: PROGRESS REPT.,  
MAR 72 31P  
REPT. NO. USAMRL-968  
PROJ: DA-3-A-061102-B-71-R  
TASK: 3-A-061102-B-71-R-03

UNCLASSIFIED REPORT

DESCRIPTORS: (\*EAR, \*NOISE), AUDITORY NERVE, PATHOLOGY,  
NERVE FIBERS, DEAFNESS (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*COCHLEA,  
ELECTROMAGNETIC NOISE (U)

THE COCHLEAE OF TEN RHESUS MACAQUE MONKEYS EXPOSED TO IMPULSE NOISE WERE EXAMINED USING THE SURFACE PREPARATION TECHNIQUE. THERE WAS GREAT VARIABILITY IN THE SEVERITY AND EXTENT OF DAMAGE OBSERVED. ALL INNER EARS SUFFERED DESTRUCTION OF CORTI ORGAN AND MYELINATED NERVE FIBERS ALONG THE INITIAL SEGMENT OF THE BASILAR MEMBRANE. FURTHER DAMAGE, LIMITED MAINLY TO OUTER HAIR CELLS, PEAKED AT 8 TO 10 MM. GENERALLY THE THIRD OR OUTERMOST ROW OF OUTER HAIR CELLS LOST THE HIGHEST PERCENTAGE OF CELLS. TRANSITIONS BETWEEN NORMAL AND DAMAGED AREAS WERE ABRUPT. HENSEN'S CELLS WERE SPLIT AWAY FROM DEITERS' CELLS IN THE LOWER BASAL TURN IN HALF THE ANIMALS. INNER HAIR CELLS, MYELINATED NERVE FIBERS, AND RETICULAR LAMINA WERE RESISTANT TO DESTRUCTION EXCEPT IN THE HOOK AREA. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 746 083 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

FURTHER STUDY OF COMBINED HEAT, NOISE AND  
VIBRATION STRESS,

(U)

72 6P GREYER, W. F. ; HARRIS, C.  
S. ; OHLBAUM, M. ; SAMPSON, P. A. ; GUIGNARD, J.  
C. ;  
REPT. NO. AMRL-TR-71-131  
PROJ: AF-7222

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AEROSPACE MEDICINE, V43 N6  
P641-645 JUN 72.

DESCRIPTORS: (\*HEAT TOLERANCE, STRESS(PHYSIOLOGY)),  
(\*NOISE, STRESS(PHYSIOLOGY)), (\*VIBRATION,  
STRESS(PHYSIOLOGY)), PHYSIOLOGY, PERFORMANCE(HUMAN),  
BODY TEMPERATURE, HEART, BODY WEIGHT, BIOCHEMISTRY (U)  
IDENTIFIERS: SYNERGISM (U)

IN AN EARLIER STUDY A COMBINATION OF HEAT, NOISE  
AND VIBRATION STRESS HAD NO GREATER, AND FOR SOME  
MEASURES SLIGHT LESS, EFFECT ON PHYSIOLOGICAL AND  
PERFORMANCE FUNCTIONS THAN DID THE SAME LEVELS OF  
HEAT OR VIBRATION ALONE. AS A FOLLOW-UP ON THAT  
FINDING THIS STUDY USED THE SAME LEVELS OF HEAT  
(120F), NOISE (105 DB) AND VIBRATION (5  
HZ, 0.30 PEAK G), BUT WITH SOME MODIFICATIONS OF  
THE EARLIER EXPERIMENT. PHYSIOLOGICAL MEASURES  
INCLUDED SKIN AND RECTAL TEMPERATURE, HEART RATE,  
WEIGHT LOSS AND BIOCHEMICAL URINE ANALYSES.  
PERFORMANCE MEASURES INCLUDED TWO-DIMENSIONAL  
COMPENSATORY TRACKING, CHOICE REACTION TIME, A VOICE  
COMMUNICATION TEST OF LOGICAL ALTERNATIVES, MENTAL  
ARITHMETIC, VISUAL ACUITY AND SUBJECTIVE RATINGS OF  
THE STRESS CONDITIONS. THE COMBINATION OF STRESSES  
PRODUCED NO ADDITIVE STRESS INTERACTIONS. ON  
TRACKING AND REACTION TIME TESTS THE GREATEST  
IMPAIRMENT OF PERFORMANCE WAS PRODUCED BY VIBRATION  
ALONE. SUBJECTIVE RATINGS OF STRESS SEVERITY  
PROGRESSIVELY INCREASED WITH THE NUMBER OF STRESSES  
IN THE COMBINATION. SUBJECTIVE RATINGS OF STRESS  
INTRUSIVENESS, HOWEVER DID NOT SHOW SUCH A TREND.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 747 129 6/19 20/1  
ENVIRONMENTAL ACOUSTICS CHATSWORTH CALIF

EVALUATION OF HEARING LEVELS OF RESIDENTS  
LIVING NEAR A MAJOR AIRPORT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 72 99P PARNELL, J. E. INAGEL, D.  
C. COHEN, A. I  
CONTRACT: DOT-FA70-WAI-200, PHS-71-0108  
MONITOR: FAA-RD 72-72

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT NOISE, \*AIRPORTS), (\*HEARING,  
AIRCRAFT NOISE), THRESHOLDS(PHYSIOLOGY),  
EXPOSURE(PHYSIOLOGY), URBAN AREAS, ANALYSIS OF VARIANCE,  
AUDITORY ACUITY (U)  
IDENTIFIERS: LOS ANGELES INTERNATIONAL AIRPORT, \*NOISE  
POLLUTION (U)

AUDIOGRAMS AND OTHER DATA RELATED TO EAR CONDITIONS  
AND NOISE EXPOSURE WERE OBTAINED FROM RESIDENTS DRAWN  
FROM TWO NEIGHBORHOODS IN THE GREATER LOS ANGELES  
AREA. ONE COMMUNITY BORDERED LOS ANGELES  
INTERNATIONAL AIRPORT AND HAD BEEN SUBJECTED OVER  
THE YEARS TO FREQUENT TAKEOFF NOISE OF HIGH LEVEL.  
MAXIMUM RMS MEASUREMENTS OF THESE AIRCRAFT SOUNDS  
OUTDOORS IN THIS NEIGHBORHOOD RANGED FROM 76 TO 101  
DBA WITH A MEDIAN OF 88 DBA. THE SECOND  
COMMUNITY WAS SIMILAR TO THE AIRPORT ONE IN  
DEMOGRAPHY BUT FREE OF SIGNIFICANT AIRCRAFT NOISE  
INTRUSION. NOISE LEVELS HERE RARELY EXCEEDED 60  
DBA AND COMMONLY WERE 50 DBA OR LESS. BOTH  
GROUPS DISPLAYED AVERAGE HEARING LEVELS AS GOOD AND  
AT CERTAIN FREQUENCIES SLIGHTLY BETTER THAN ESTIMATES  
OBTAINED FROM THE NATIONAL HEALTH SURVEY OF  
1960-1962. THE OVERALL FINDINGS DID NOT MAKE IT  
POSSIBLE TO DRAW FIRM CONCLUSIONS ABOUT COMMUNITY  
AIRCRAFT NOISE EXPOSURE AS A CAUSE OF THE APPARENT  
DIFFERENCES IN HEARING LEVELS BETWEEN THE TWO GROUPS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 747 685 20/1 13/6 19/3  
ARMY MATERIEL COMMAND TEXARKANA TEX INTERN TRAINING  
CENTER

AN ANALYSIS OF NOISE CONDITIONS PRESENT IN  
COMMERCIAL AND MILITARY VEHICLES.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
71 64P ELLIOTT, JAMES EDWARD ;

UNCLASSIFIED REPORT

DESCRIPTORS: (\*VEHICLES, \*NOISE), HUMAN FACTORS  
ENGINEERING, AUDITORY PERCEPTION,  
THRESHOLDS(PHYSIOLOGY), ENGINE NOISE, ENGINE MUFFLERS,  
SAFETY, STATISTICAL DATA, THESES (U)  
IDENTIFIERS: \*NOISE POLLUTION (U)

A NOISE SURVEY WAS CONDUCTED TO DETERMINE WHETHER  
HAZARDOUS NOISE CONDITIONS EXIST WITHIN CONSTRUCTION,  
FARM, OR MILITARY VEHICLES. A CHECK WAS ALSO MADE  
ON THE BASIC MODES OF PUBLIC TRANSPORTATION;  
PLANE, RAILROAD, BUS, TAXI, AND PRIVATE AUTOMOBILES.  
EXTREME NOISE CONDITIONS WERE FOUND IN MUCH OF THE  
CONSTRUCTION AND FARM EQUIPMENT. THE MILITARY  
DESIGN VEHICLES ALSO SHOWED SOME SITUATIONS OF  
EXTREME NOISE. THE PUBLIC TRANSPORTATION MODES  
WERE GENERALLY FREE FROM ANY EXTREME NOISE  
CONDITIONS. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 747 797 5/10  
TEXAS TECH UNIV LUBBOCK CENTER OF BIOTECHNOLOGY AND HUMAN  
PERFORMANCE

THE EFFECTS OF NOISE AND RESPONSE  
COMPLEXITY UPON VIGILANCE PERFORMANCE. (U)

72 24P CHILDS, JERRY M. IHALCOMB,  
CHARLES G. ;  
CONTRACT: DAAD05-69-C-0102  
PROJ: DA-1-TO14501-B-81-A, THEMIS-603

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE SOUTHWESTERN  
PSYCHOLOGICAL ASSOCIATION CONVENTION, OKLAHOMA  
CITY, OKLAHOMA, APRIL 1972.

DESCRIPTORS: (\*PERFORMANCE(HUMAN), STRESS(PSYCHOLOGY)),  
(\*STRESS(PSYCHOLOGY), NOISE), ATTENTION, VISUAL  
PERCEPTION, PERFORMANCE(HUMAN), VISUAL SIGNALS,  
STATISTICAL ANALYSIS (U)  
IDENTIFIERS: TASK PERFORMANCE, THEMIS PROJECT (U)

VISUAL VIGILANCE (DETECTION) PERFORMANCE OF 140  
SS WAS INVESTIGATED WITH RESPECT TO ENVIRONMENTAL  
STIMULATION (NOISE) AND INTRAORGANISMIC  
STIMULATION (SIMPLE VS. COMPLEX RESPONSE).  
CORRECT DETECTIONS AND FALSE ALARMS WERE ANALYZED.  
RESULTS ARE EVALUATED IN TERMS OF THE ACTIVATION  
HYPOTHESIS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 748 055 5/10 20/1  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

HUMAN RESPONSE TO SONIC BOOM IN THE  
LABORATORY AND THE COMMUNITY,

(U)

JAN 71 18P GIERKE, H. E. VON NIXON, C.  
W. ;  
REPT. NO. AMRL-TR-69-47  
PROJ: AF-7231

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN THE JNL. OF THE ACOUSTICAL  
SOCIETY OF AMERICA, V51 N2 P766-782 1972.  
SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 3 NOV  
70.

DESCRIPTORS: (\*SONIC BOOM, REACTION(PSYCHOLOGY)),  
PSYCHOACOUSTICS, ATTITUDES(PSYCHOLOGY), SUPERSONIC  
AIRCRAFT, TRANSPORT AIRCRAFT, INTENSITY  
IDENTIFIERS: \*NOISE POLLUTION, OVERPRESSURE

(U)

(U)

PRESENT-DAY ESTIMATES REGARDING THE ACCEPTABILITY  
OF SONIC BOOMS BY MAN ARE DERIVED FROM VARIOUS  
OBSERVATIONS, OVERFLIGHT PROGRAMS, AND EXPERIMENTAL  
FIELD AND LABORATORY STUDIES CONDUCTED BOTH WITHIN  
AND OUTSIDE THE UNITED STATES. THE LOUDNESS AND  
ANNOYANCE OF INDIVIDUAL BOOMS AND THEIR DEPENDENCE ON  
THE BOOM OVERPRESSURE AND PRESSURE-TIME FUNCTION AS  
WELL AS THE COMPLEX REACTION OF INDIVIDUALS, GROUPS,  
AND COMMUNITIES EXPOSED TO SONIC BOOMS OF VARIED  
MAGNITUDE AND FREQUENCY ARE DISCUSSED. THE FEW  
EXPERIMENTS AVAILABLE PROVING THAT EVEN SONIC BOOMS  
OF THE MAXIMUM INTENSITY PRESENTLY FEASIBLE DO NOT  
PRODUCE DIRECT MEDICAL INJURY ARE DESCRIBED. BASED  
ON THE INTEGRATED BODY OF RESULTS OF RECENT  
PHYSIOLOGICAL, PSYCHOACOUSTIC, BEHAVIORAL, AND  
SOCIOLOGICAL STUDIES IN VARIOUS COUNTRIES, ESTIMATES  
OF THE EFFECTS AND ACCEPTABILITY OF REGULAR, FREQUENT  
SUPERSONIC COMMERCIAL OVERLAND FLIGHT SCHEDULES ARE  
PRESENTED AND DISCUSSED IN TERMS OF AIRCRAFT NOISE  
POLLUTION IN GENERAL, AND OF POTENTIAL CERTIFICATION  
OF AIRCRAFT WITH RESPECT TO NOISE AND SONIC BOOM.  
FINDINGS SUPPORT THE CURRENT POLICY THAT COMMERCIAL  
SUPERSONIC TRANSPORT AIRCRAFT WILL NOT BE PERMITTED  
TO FLY OVER THE UNITED STATES UNLESS AND UNTIL  
THE NOISE FACTORS ARE BROUGHT WITHIN ACCEPTABLE  
LIMITS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 749 887 6/19  
BIOTECHNOLOGY INC FALLS CHURCH VA

BIOASTRONAUTICS DATA BOOK.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
SEP 72 927P PARKER, JAMES F. , JR.;  
WEST, VITA R. ;  
CONTRACT: N00014-67-C-0526  
PROJ: NR-309-022

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES N65-15594.

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), SCIENTIFIC RESEARCH),  
(\*SPACE BIOLOGY, DATA), (\*AEROSPACE MEDICINE, DATA),  
BAROMETRIC PRESSURE, TEMPERATURE, ACCELERATION  
TOLERANCE, IMPACT, VIBRATION, WEIGHTLESSNESS,  
RADIOBIOLOGY, TOXICITY, PSYCHOPHYSIOLOGY, PERCEPTION,  
NOISE, HUMAN FACTORS ENGINEERING, LIFE SUPPORT, SPACE  
ENVIRONMENTS (U)  
IDENTIFIERS: ACOUSTICS, HEARING, BIOMECHANICS (U)

CONTENTS: BAROMETRIC PRESSURE, ATMOSPHERE,  
TEMPERATURE; SUSTAINED LINEAR ACCELERATION, ROTARY  
ACCELERATION; IMPACT, VIBRATION, WEIGHTLESSNESS;  
IONIZING RADIATION, TOXICOLOGY; RESPIRATORY  
SYSTEM; THE VESTIBULAR SYSTEM, VISION, AUDITORY  
SYSTEM, NOISE AND BLAST; HUMAN CONTROL  
CAPABILITIES, ATMOSPHERE CONTROL, WORK, HEAT, AND  
OXYGEN COST; COMBINED ENVIRONMENTAL STRESSES,  
AEROSPACE VEHICLE WATER-WASTE MANAGEMENT. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 750 043 5/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

EFFECTS OF INTERMITTENT AND CONTINUOUS NOISE  
ON SERIAL SEARCH PERFORMANCE,

(U)

JUL 72 9P HARRIS, C. STANLEY ;  
REPT. NO. AMRL-TR-72-18  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN PERCEPTUAL AND MOTOR  
SKILLS, V35 P627-634 1972.

DESCRIPTORS: (\*NOISE, \*STRESS(PSYCHOLOGY)), INTENSITY,  
PERFORMANCE(HUMAN) (U)

TO DETERMINE WHETHER HIGH INTENSITY BROADBAND NOISE  
HAS AN ADVERSE EFFECT ON HUMAN PERFORMANCE WHEN  
SPECIAL CONDITIONS RELATED TO TYPE OF TASK, LENGTH OF  
TESTING, AND INTENSITY OF NOISE EXPOSURE ARE MET, 3  
GROUPS OF 20 SS EACH WERE TESTED ON A SERIAL SEARCH  
TASK. THE FIRST GROUP WAS PRESENTED CONTINUOUS  
BROADBAND NOISE, THE SECOND RECEIVED INTERMITTENT  
NOISE, AND THE THIRD SERVED AS A CONTROL GROUP.  
PERFORMANCE WAS MEASURED FOR 36 MIN. CONTINUOUSLY  
ON A PRACTICE DAY AND 4 TEST DAYS. BOTH NOISE  
GROUPS PRODUCED APPROXIMATELY THE SAME RESULTS.  
BOTH GROUPS FOUND SIGNIFICANTLY FEWER NUMBERS ON  
THE TASK THAN THE CONTROL GROUP ON THE LAST TWO DAYS  
OF TESTING. THE EFFECT WAS QUITE ORDERLY; THE  
SMALLEST DIFFERENCE BETWEEN GROUPS OCCURRED ON THE  
1ST TESTING DAY, AND THE LARGEST OCCURRED ON THE LAST  
DAY OF TESTING. ON THESE DAYS THE EFFECT WAS  
CONSTANT THROUGHOUT THE 36 MIN. OF TESTING. THE  
RESULTS SUPPORT THE CONTENTION THAT WHEN CERTAIN  
CONDITIONS OF TESTING ARE MET, A RELIABLE EFFECT OF  
NOISE ON PERFORMANCE CAN BE DEMONSTRATED.  
(AUTHOR) (U)

UNCLASSIFIED

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 750 649 20/1 15/5  
HUMAN ENGINEERING LABS ABERDEEN PROVING GROUND MD

MATERIEL DESIGN STANDARD FOR NOISE LEVELS  
OF ARMY MATERIEL COMMAND EQUIPMENT, (U)

SEP 72 29P GARINTHER, GEORGES R. HODGE,  
DAVID C. ;  
REPT. NO. HEL-STANDARD-S-1-63C

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE; SUPERSEDES AD-632 913.

DESCRIPTORS: (\*NOISE, \*STANDARDS), (\*ARMY EQUIPMENT,  
NOISE), HUMAN FACTORS ENGINEERING, HAZARDS, VEHICLES,  
AIRCRAFT NOISE, ACOUSTIC IMPEDANCE, SOUND TRANSMISSION,  
INSTRUMENTATION, ENGINE NOISE, HEARING, MEASUREMENT (U)  
IDENTIFIERS: \*NOISE, \*NOISE POLLUTION, \*ACOUSTIC  
MEASUREMENT, DESIGN STANDARDS (U)

HEL STANDARD S-1-63C IS THE U. S. ARMY  
MATERIEL COMMAND'S DESIGN STANDARD FOR NOISE.  
IT ESTABLISHES THE ACOUSTICAL NOISE LEVELS  
PERMITTED IN AND AROUND ALL EQUIPMENT DESIGNED,  
DEVELOPED AND PROCURED BY AMC, AND SPECIFIES THE  
TESTING REQUIREMENTS AND MEASUREMENT TECHNIQUES FOR  
DETERMINING CONFORMANCE TO THE NOISE LIMITS.  
ADHERENCE TO THE PROVISIONS OF THIS STANDARD SHOULD  
ASSURE COMPLIANCE WITH TB MED 251. THE NOISE  
LEVELS AND TEST PROCEDURES OF THIS STANDARD ARE  
INTENDED TO COVER TYPICAL OPERATIONAL CONDITIONS AND  
ARE BASED ON CONSIDERATIONS OF HAZARD TO HEARING,  
SPEECH INTELLIGIBILITY, AURAL DETECTION AND  
APPROPRIATE STATE AND FEDERAL NOISE LIMITS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 750 840 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

EFFECTS OF INCREASING INTENSITY LEVELS OF  
INTERMITTENT AND CONTINUOUS 1000-HZ TONES ON  
HUMAN EQUILIBRIUM, (U)

JUN 72 10P HARRIS, C. STANLEY ;  
REPT. NO. AMRL-TR-72-11  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN THE PERCEPTUAL AND MOTOR  
SKILLS, V35 P395-405 1972.

DESCRIPTORS: (\*EQUILIBRIUM(PHYSIOLOGY), \*NOISE),  
VESTIBULAR APPARATUS, STIMULATION(PHYSIOLOGY),  
PERCEPTION, VERTIGO, STRESS(PHYSIOLOGY) (U)

HUMAN EQUILIBRIUM WAS MEASURED DURING EXPOSURE TO  
CONTINUOUS AND INTERMITTENT 1000-HZ TONES PRESENTED  
BOTH ASYMMETRICALLY (ONE EAR) AND SYMMETRICALLY  
(BOTH EARS). INTERMITTENCY COMBINED WITH  
ASYMMETRY PRODUCED GREATER DECREMENTS IN EQUILIBRIUM  
THAN EITHER VARIABLE ALONE. THE RESULTS ARE  
INTERPRETED AS A POSSIBLE DEMONSTRATION OF ACOUSTIC  
STIMULATION OF THE VESTIBULAR SYSTEM. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 752 535 13/2 1/5  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

NOISE ENVIRONMENTS OF CONTROL TOWERS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 72 20P CAPELL, ROBERT A. ;  
REPT. NO. EHL-M-72M-1  
PROJ: AF-EHL-NBF-133

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRPORT CONTROL TOWERS, \*NOISE), (\*JET  
FIGHTERS, \*AIRCRAFT NOISE), SOUND, AIR FORCE,  
ATTENUATION

(U)

IDENTIFIERS: \*NOISE POLLUTION, F-104 AIRCRAFT, F-105  
AIRCRAFT, F-111 AIRCRAFT, F-4 AIRCRAFT

(U)

NOISE SURVEYS WERE MADE AT THE CONTROL TOWERS OF  
TWO AIR FORCE BASES. MEASUREMENTS OF THE  
INDOOR AND OUTDOOR SOUND PRESSURE LEVELS DURING  
AIRCRAFT TAKE-OFFS AND OTHER OPERATIONS WERE  
RECORDED. THESE DATA ARE PRESENTED SO THAT AN  
EVALUATION OF THE COMMUNICATION ENVIRONMENTS CAN BE  
MADE BY USING CERTAIN OPERATIONAL DATA FROM EACH  
BASE. AN EVALUATION OF THE NOISE ATTENUATION  
PROVIDED BY EACH TOWER IS ALSO MADE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 752 881 20/1  
ACOUSTICAL SOCIETY OF AMERICA NEW YORK

PROCEEDINGS OF THE SONIC BOOM SYMPOSIUM  
(2ND) SPONSORED BY THE ACOUSTICAL SOCIETY OF  
AMERICA (80TH MEETING) HELD AT HOUSTON,  
TEXAS ON 3 NOVEMBER 1970, (U)

72 152P RIBNER, HERBERT S. ; HUBBARD,  
HARVEY H. ;

UNCLASSIFIED REPORT

AVAILABILITY: AVAILABLE FROM BACK-NUMBERS  
DEPT., AMERICAN INSTITUTE OF PHYSICS, 335 EAST 45  
ST., NEW YORK, N. Y. 10017. PC\$5.00.  
SUPPLEMENTARY NOTE: SPONSORED IN PART BY FEDERAL  
AVIATION ADMINISTRATION. LIBRARY OF CONGRESS CARD  
CATALOG NO. 72-96208. INTERNATIONAL STANDARD BOOK  
NO. 0-88318-201-7.

DESCRIPTORS: (SONIC BOOM, SYMPOSIA), ACOUSTICS,  
SUPERSONIC FLIGHT, SHOCK WAVES, PROPAGATION,  
STRESS (PHYSIOLOGY), HUMANS, ANIMALS, BEHAVIOR (U)  
IDENTIFIERS: NOISE POLLUTION, RAY TRACING (U)

A MAJOR ENVIRONMENTAL EFFECT OF SUPERSONIC FLIGHT  
THAT SETS IT APART FROM OTHER AIRCRAFT OPERATIONS IS  
THE SONIC BOOM. THE WAVE PATTERN THAT TRAVELS WITH  
THE AIRCRAFT--RATHER LIKE THE BOW WAVE OF A SHIP--  
SWEEPS OVER UNDERLYING AREAS AND MIMICS THE ADVANCING  
SHOCK WAVE OF A MILD EXPLOSION. IMPELLED BY THE  
PROSPECT OF CIVIL SUPERSONIC TRANSPORT (SST)  
AIRCRAFT, THERE HAS BEEN A GREAT VOLUME OF RESEARCH  
ON THE SONIC BOOM AND ITS EFFECTS, PARTICULARLY  
DURING THE LAST DECADE. THE STATE-OF-THE-ART AS OF  
1965 WAS SUMMED UP IN THE FIRST SONIC BOOM  
SYMPOSIUM SPONSORED BY THE ACOUSTICAL SOCIETY  
OF AMERICA, HELD IN ST. LOUIS. THE STATE-OF-  
THE-ART AS OF 1970 WAS LARGELY SUMMED UP IN THE  
SECOND SONIC BOOM SYMPOSIUM HELD IN HOUSTON  
FIVE YEARS LATER ON 3 NOVEMBER 1970. THE 1970  
SYMPOSIUM CONSISTED AGAIN OF A SERIES OF INVITED  
PAPERS, FOR THE MOST PART OF A SURVEY NATURE. THE  
AUTHORS WERE DRAWN FROM THE INTERNATIONAL COMMUNITY  
OF RESEARCHERS ON SONIC BOOM AND ITS EFFECTS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 752 974 6/19 20/1  
NAVAL SUBMARINE MEDICAL RESEARCH LAB GROTON CONN

SPEECH DISCRIMINATION IN NOISE AND HEARING  
LOSS AT 3000 HERTZ.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT. NO. 7,  
JUL 72 11P MURRY, THOMAS ; LACROIX, PAUL

G. ;

REPT. NO. NSMRL-719  
PROJ: M4305.08

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AUDITORY PERCEPTION, \*NOISE), (\*DEAFNESS,  
NOISE), AUDIOMETRY, STRESS(PHYSIOLOGY),  
PSYCHOPHYSIOLOGY

(U)

NAVY PERSONNEL WITH NORMAL HEARING AND WITH HEARING  
LOSSES AT 3 KHZ AND ABOVE WERE EVALUATED ON TESTS  
OF SPEECH DISCRIMINATION IN NOISE. TWO TESTS WERE  
USED, ONE PREVIOUSLY DESIGNED FOR USE IN AUDIOLOGICAL  
CLINICS AND ONE CONSTRUCTED AT THIS LABORATORY WITH  
BACKGROUND NOISE SIMILAR TO THAT FOUND IN THE  
ENGINE ROOMS OF NUCLEAR SUBMARINES. THE RESULTS  
INDICATE THAT SUBJECTS WITH HEARING LOSSES AT 3 KHZ  
AND ABOVE MAY SCORE AS MUCH AS 11 PER CENT MORE  
GENERALLY AT LEAST FIVE PER CENT BELOW NORMALS FOR A  
SPEECH DISCRIMINATION TASK IN NOISE. FOR THE TWO  
TYPES OF NOISE USED IN THESE TESTS, THERE WAS LITTLE  
OR NO DIFFERENCE IN THE GENERAL TREND OF TEST  
RESULTS. THE CORRELATION COEFFICIENTS OBTAINED  
BETWEEN THE PURE TONE AUDIOMETRIC FINDINGS AND THE  
SPEECH DISCRIMINATION TASK IN NOISE WERE FOUND TO BE  
NONSIGNIFICANT FOR THE MOST PART. FROM THESE  
RESULTS, IT APPEARS THAT HEARING LOSS AT 3 KHZ  
REDUCES ONE'S ABILITY TO DISCRIMINATE SPEECH IN NOISE  
BUT THIS REDUCTION IS MINOR. (AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 753 637 5/10 17/2  
CIVIL AEROMEDICAL INST OKLAHOMA CITY OKLA

BINAURAL PROCESSING OF SPEECH IN LIGHT  
AIRCRAFT,

(U)

SEP 72 9P TOBIAS, JERRY V. ;  
PROJ: FAA-AM-A-71-PSY-16, FAA-AM-A-72-PSY-16  
MONITOR: FAA-AM 72-31

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPEECH, \*AUDITORY PERCEPTION), (\*AVIATION  
MEDICINE, NOISE), (\*JET AIRCRAFT, VOICE COMMUNICATIONS),  
AIRCRAFT CABINS, AIRCRAFT NOISE, HEARING,  
INTELLIGIBILITY, CIVIL AVIATION (U)

IDENTIFIERS: AIRCRAFT, LIGHTWEIGHT, BINAURAL  
HEARING (U)

LABORATORY STUDIES HAVE SHOWN THAT THE HUMAN  
BINAURAL AUDITORY SYSTEM CAN EXTRACT SIGNALS FROM  
NOISE MORE EFFECTIVELY WHEN THE SIGNALS (OR THE  
NOISE) ARE PRESENTED IN ONE OF SEVERAL INTERAURALLY  
DISPARATE CONFIGURATIONS. QUESTIONS ARISE AS TO  
WHETHER THESE LABORATORY STUDIES IN ANECHOIC OR SEMI-  
ANECHOIC SPACES CAN BE GENERALIZED TO MORE  
REVERBERANT LISTENING CONDITIONS. IN THIS STUDY,  
TESTS WERE CONDUCTED IN THE CABIN OF A LIGHT  
AIRPLANE, IN FLIGHT. FOR SYMMETRICAL SIGNAL  
SOURCES, LOUDSPEAKER TRANSMISSIONS OF  
INTELLIGIBILITY-TEST MATERIALS PRODUCE HIGHER  
INTELLIGIBILITY SCORES FOR SPEAKERS OUT-OF-PHASE THAN  
FOR SPEAKERS IN-PHASE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 111 20/1 1/3  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

NOISE FROM AIRCRAFT OPERATIONS, U. S.  
NAVAL AIR STATION, LEMOORE,  
CALIFORNIA.

(U)

AUG 72 35P  
REPT. NO. BBN-2225  
CONTRACT: N62474-72-C-0344

UNCLASSIFIED REPORT

DESCRIPTORS: (\*NAVAL AIR STATIONS, \*JET AIRCRAFT NOISE),  
TAKEOFF, AIRCRAFT LANDINGS, TAXIING, JET ENGINE NOISE,  
STRESS(PHYSIOLOGY), TOLERANCES(PHYSIOLOGY), AVIATION  
PERSONNEL, CALIFORNIA (U)  
IDENTIFIERS: \*LEMOORE NAVAL AIR STATION, \*NOISE  
POLLUTION, NOISE (U)

THE REPORT PROVIDES DESCRIPTIONS OF THE AIRCRAFT  
NOISE ENVIRONMENT FOR LAND AREAS ON OR IN THE  
VICINITY OF THE NAVAL AIR STATION, LEMOORE,  
CALIFORNIA. THE NOISE RESULTING FROM AIRCRAFT  
OPERATIONS AT NAS LEMOORE IS CONSIDERED IN SOME  
DETAIL FROM THE POINT OF VIEW OF LAND USE, AND ALSO  
WITH RESPECT TO POTENTIAL HEARING DAMAGE IN  
MAINTENANCE AREAS ON THE STATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 174 1/5 9/2  
CONSAD RESEARCH CORP PITTSBURGH PA

A COMMUNITY/AIRPORT ECONOMIC DEVELOPMENT  
MODEL. VOLUME III. USER'S MANUAL.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 71-MAY 72,  
MAY 72 213P HINKLE, JERE J. ;  
CONTRACT: DOT-FA71WA-2565  
MONITOR: FAA-EQ,CPG 72-3-VOL-3,73-0045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-753 836 AND  
VOLUME 4, AD-751 932.

DESCRIPTORS: (\*AIRPORTS, MATHEMATICAL MODELS), (\*URBAN  
PLANNING, AIRPORTS), (\*COMPUTER PROGRAMS, INSTRUCTION  
MANUALS), ECONOMICS, SITE SELECTION, AIRPLANE ENGINE  
NOISE (U)  
IDENTIFIERS: \*NOISE POLLUTION, CAEDM COMPUTER PROGRAM,  
PROGRAMMING MANUALS, FORTRAN, FORTRAN 4 PROGRAMMING  
LANGUAGE, LAND USE, ECONOMIC MODELS (U)

THE VOLUME PRESENTS A DESCRIPTION OF THE OPERATIONS  
OF THE COMMUNITY/AIRPORT ECONOMIC DEVELOPMENT  
MODEL (CAEDM). THESE CAN BE USED TO EXAMINE A  
WIDE VARIETY OF PROBLEMS EXAMINING AIRCRAFT NOISE AND  
LAND USE INCOMPATIBILITIES IN THE VICINITY OF AN  
AIRPORT. INFORMATION IS GIVEN IN BOTH NARRATIVE AND  
GRAPHIC FORM REGARDING THE KIND OF INPUT THAT IS  
REQUIRED TO BE PROVIDED BY THE USER OF THE PROGRAM.  
THE OPTIONS THAT ARE AVAILABLE WITHIN THE PROGRAM  
AND THE FORMAT AND ORDERING OF THE DATA THAT ARE  
REQUIRED FOR PROGRAM OPERATION ARE GIVEN. SAMPLE  
OUTPUT OF THE CAEDM IS PRESENTED IN THIS VOLUME.  
A LISTING OF THE CAEDM PROGRAM IS INCLUDED.  
(AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 631 6/19 5/10  
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

AEROMEDICAL ASPECTS OF VIBRATION AND  
NOISE.

(U)

DESCRIPTIVE NOTE: AGARDOGRAPH REPT.,  
NOV 72 280P GUIGNARD, J. C. ; KING, P.  
F. ;  
REPT. NO. AGARD-AG-151

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO FURNISHED.

DESCRIPTORS: (\*AVIATION MEDICINE, NOISE), (\*NOISE,  
\*AEROSPACE MEDICINE), (\*VIBRATION, AEROSPACE MEDICINE),  
STRESS(PHYSIOLOGY), STRESS(PSYCHOLOGY),  
TOLERANCES(PHYSIOLOGY), HEARING, PATHOLOGY, HAZARDS,  
SAFETY, PROTECTION, SENSES(PHYSIOLOGY) (U)  
IDENTIFIERS: BIODYNAMICS (U)

VIBRATION AND NOISE ARE TREATED SEPARATELY IN  
PARTS ONE AND TWO OF THIS VOLUME; WHILE PART  
THREE DEALS WITH THE SPECIAL AEROMEDICAL PROBLEM OF  
AUDITORY PERCEPTION IN AIRCREW AND GROUND SUPPORT  
PERSONNEL AND ITS CONSERVATION. PART FOUR IS A  
GLOSSARY OF RELEVANT TERMS. THIS DIVISION OF THE  
SUBJECT MATTER RECOGNISES THAT IN PRACTICE VIBRATION  
AND NOISE ARE CONVENIENTLY STUDIED, MEASURED AND  
CONTROLLED AS SEPARATE ENTITIES. IT SHOULD,  
HOWEVER, BE BORNE IN MIND THAT THESE CONDITIONS  
RARELY AFFECT MAN SINGLY. THEY ARE COMMONLY  
PRESENT AT THE SAME TIME; AND VIBRATION AND NOISE MAY  
OFTEN BE ASSOCIATED WITH DIFFERENT KINDS OF  
ENVIRONMENTAL AGENT, SUCH AS HEAT, TO MAKE UP A  
COMBINED ENVIRONMENTAL STRESS. THE HUMAN RESPONSE  
TO SUCH COMBINATIONS OF STRESSFUL AGENTS IS STILL A  
LARGELY NEGLECTED FIELD OF RESEARCH. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 863 6/19 5/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

SOME EFFECTS OF NOISE ON MAN, (U)

71 11P NIXON, CHARLES W. ;  
REPT. NO. AMRL-TR-71-53

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN PROCEEDINGS OF THE 1971  
INTER-SOCIETY ENERGY CONVERSION ENGINEERING  
CONFERENCE, 3-5 AUG 71, P1024-1033 1971.

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), \*NOISE),  
(\*PSYCHOACOUSTICS, NOISE), (\*PSYCHOACOUSTICS, NOISE),  
(\*PUBLIC HEALTH, NOISE), STRESS(PSYCHOLOGY),  
EXPOSURE(PHYSIOLOGY), CONTROL, EXPERIMENTAL DATA (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*NOISE REDUCTION (U)

THE PRIMARY REASON FOR NOISE ABATEMENT IS TO  
ELIMINATE DELETERIOUS EFFECTS ON MAN.  
CONSEQUENTLY, IT IS IMPORTANT THAT PERSONNEL WHO  
IMPLEMENT NOISE CONTROL MEASURES UNDERSTAND WHAT  
HUMAN RESPONSES ARE TO BE EXPECTED WHEN MAN  
EXPERIENCES VARIOUS CATEGORIES OF NOISE EXPOSURE.  
IT IS THE INTENT OF THIS PAPER, THROUGH CITING OF  
LABORATORY EXPERIMENTATION AND NOISE EXPOSURE  
EXPERIENCE OVER THE YEARS, TO DEMONSTRATE THAT THERE  
ARE MANY TYPES OF ACOUSTIC EXPOSURE WHICH DO AFFECT  
THE PHYSIOLOGICAL AND PSYCHOLOGICAL FUNCTIONS OF MAN  
IN DIFFERENT WAYS. IMPLICATIONS OF THESE EFFECTS  
FOR GENERAL HEALTH AND WELL-BEING ARE MENTIONED.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 943 20/1 1/3  
NATIONAL AERONAUTICAL ESTABLISHMENT OTTAWA (ONTARIO)

A SIMPLE MODEL OF SHOCK CELL NOISE  
GENERATION AND ITS REDUCTION. (U)

DESCRIPTIVE NOTE: AERONAUTICAL REPT.,  
OCT 72 40P CHAN, Y. Y. ;  
REPT. NO. NAE-LR-564  
MONITOR: NRC 12923

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SOUND PITCH, ATTENUATION), (\*JETS,  
SUPERSONIC FLOW), (\*SUPERSONIC AIRCRAFT, \*JET PLANE  
NOISE), AERODYNAMIC NOISE, NOZZLE GAS FLOW,  
UNCONVENTIONAL NOZZLES, SHOCK WAVES, ACOUSTICS, SPECTRUM  
SIGNATURES, ACOUSTIC IMPEDANCE, NOZZLE AREA RATIO,  
MATHEMATICAL MODELS, CANADA (U)  
IDENTIFIERS: NEAR FIELD NOISE, NOISE GENERATION, NOISE  
REDUCTION, NOISE POLLUTION, COMPUTER AIDED DESIGN,  
DESIGN CRITERIA (U)

BASED ON THE DATA OF NEAR FIELD SURVEYS OF THE  
SOUND PRESSURE FROM A CHOKED JET, A SIMPLE MODEL IS  
PROPOSED FOR THE MECHANISM OF THE SCREECH GENERATION.  
A CONVECTED WAVE PROPAGATES DOWNSTREAM ALONG THE  
JET BOUNDARY AND IS MODULATED BY ITS INTERACTION WITH  
THE SHOCK-EXPANSION WAVES OF THE JET. THESE  
INTERACTIONS GENERATE STRONG DIPOLE RADIATIONS.  
USING THIS MODEL, AN EXCELLENT REPRODUCTION OF THE  
ESSENTIAL FEATURES OF THE EXPERIMENTAL RESULTS IS  
OBTAINED, BY PREVENTING THE FORMATION OF SHOCK  
WAVES INSIDE THE JET, THE STRONG DIPOLE RADIATION AND  
HENCE THE SCREECH NOISE CAN BE ELIMINATED. DESIGN  
DATA FOR PERFORATED NOZZLES TO ACHIEVE FULL EXPANSION  
OF THE JET ARE PROVIDED. THIS AVOIDS THE  
MECHANICAL COMPLICATION OF AN ADJUSTABLE CONVERGENT-  
DIVERGENT NOZZLE. (AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 081 6/19  
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

PERFORMANCE AND BIODYNAMIC STRESS-INFLUENCE  
OF INTERACTING STRESSES ON PERFORMANCE. (U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS NO. 101.  
NOV 72 87P  
REPT. NO. AGARD-CP-101

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PAPERS PRESENTED AT THE AGARD  
AEROSPACE MEDICAL PANEL SPECIALIST MEETING,  
BRUSSELS, BELGIUM 2 JUN 72. NATO FURNISHED.

DESCRIPTORS: (\*AVIATION MEDICINE, STRESS(PHYSIOLOGY)),  
(\*STRESS(PHYSIOLOGY), \*PERFORMANCE(HUMAN)),  
(\*STRESS(PSYCHOLOGY), PERFORMANCE(HUMAN)), (\*AEROSPACE  
MEDICINE, STRESS(PHYSIOLOGY)), ACCELERATION TOLERANCE,  
NOISE, HEAT, VIBRATION, FLIGHT, SPACE FLIGHT, SYMPOSI(U)  
IDENTIFIERS: BIODYNAMICS (U)

THE VOLUME CONTAINS THIRTEEN PAPERS AND ENSUING  
DISCUSSIONS. PAPERS PRESENTED ON THE PHYSIOLOGICAL  
AND PSYCHOLOGICAL ASPECTS OF STRESSES ENCOUNTERED IN  
FLIGHT INCLUDE THE EFFECTS OF EXPOSURE TO HIGH  
ACCELERATION ENVIRONMENTS, THE EFFECTS OF COMBINED  
STRESSES INCLUDING NOISE, HEAT, AND VIBRATION, AND  
THE EFFECTS OF LONG DURATION FLIGHTS.  
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 183 13/1 5/5  
ARMY NATICK LABS MASS

EVALUATION OF NOISE LEVEL OF REFRIGERATION  
EQUIPMENT.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 72 33P BUDNICK, MORRIS L. ;  
REPT. NO. USA-NLABS-TR-72-71-GP

UNCLASSIFIED REPORT

DESCRIPTORS: (\*REFRIGERATION SYSTEMS, \*NOISE),  
(\*OPERATORS(PERSONNEL), \*TOLERANCES(PHYSIOLOGY)),  
INTERNAL COMBUSTION ENGINE NOISE, COMPRESSOR NOISE,  
ENGINE MUFFLERS, MILITARY PERSONNEL, ACOUSTIC IMPEDANCE,  
ACOUSTIC INSULATION, TEST METHODS, HUMAN FACTORS  
ENGINEERING (U)

IDENTIFIERS: NOISE POLLUTION, NOISE REDUCTION, NOISE,  
NOISE EXPOSURE (U)

THE REPORT COVERS AN EVALUATION OF THE GASOLINE-  
ENGINE-DRIVEN 3000 BTU/HR CAPACITY, 5000 BTU/HR  
CAPACITY REFRIGERATION UNITS TO ESTABLISH NOISE  
LEVELS DURING OPERATION FOR THE CONDITIONS: AS  
MANUFACTURED, AFTER ADDITION OF A MUFFLER, AND AFTER  
APPLICATION OF ACOUSTICAL MATERIAL. THE OBJECTIVES  
OF THE EVALUATION WERE TO DETERMINE THE NOISE LEVEL  
AT THE OPERATOR'S POSITION FOR EACH OF THE UNITS AS  
MANUFACTURED, AFTER ADDITION OF A MUFFLER, AND AFTER  
APPLICATION OF TWO TYPES OF ACOUSTICAL MATERIAL; TO  
DETERMINE THE DISTANCES IN FRONT OF, TO THE LEFT, AND  
TO THE RIGHT OF EACH UNIT TO THE 90-DECIBEL NOISE  
LEVEL; TO DETERMINE THE BACK PRESSURE IN THE EXHAUST  
MANIFOLD OF EACH UNIT AFTER ASSEMBLY OF THE VARIOUS  
MUFFLERS; AND DETERMINE THE LEVELS OF THE OCTAVE BAND  
FOR THE 150-300, 300-600, 600-1200, 1200-2400, 2400-  
4800, AND 4800-10,000 CYCLES PER SECOND BANDS AT THE  
OPERATOR'S POSITION FOR EACH OF THE REFRIGERATION  
UNITS IN THE VARIOUS CONFIGURATIONS ARE DISCUSSED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 363 5/10  
OHIO STATE UNIV COLUMBUS DEPT OF PSYCHOLOGY

MULTI-TASK TIME-SHARING REQUIREMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 69-JUL 71,  
AUG 72 39P BRIGGS, GEORGE E. ; FISHER,  
RONALD P. ; GREENBERG, SETH N. ; LYONS, JAMES  
J. ; PETERS, GREGORY L. ;

CONTRACT: F33615-69-C-1663

PROJ: AF-7183

TASK: 718304

MONITOR: AMRL TR-71-105

UNCLASSIFIED REPORT

DESCRIPTORS: (•PILOTS, •PERFORMANCE(HUMAN)),  
PERFORMANCE(HUMAN), TRACKING, DECISION MAKING,  
REACTION(PSYCHOLOGY), NOISE, ATTENTION

(U)

IDENTIFIERS: CHOICE MAKING, INFORMATION  
PROCESSING(PSYCHOLOGY), TRACKING TASKS

(U)

TEN LABORATORY EXPERIMENTS ARE REPORTED ON DUAL-TASK PERFORMANCE. A CONTINUOUS TRACKING TASK AND A DISCRETE CHOICE REACTION TIME TASK WERE USED AS REPRESENTATIVE OF THE KINDS OF INFORMATION PROCESSING REQUIRED OF AN AIRCRAFT PILOT. THE RESEARCH DEALT WITH THREE MAJOR CONCERNS: A DEMONSTRATION OF THE TIME-SHARING EFFECT AND AN EXAMINATION OF THE INFLUENCE OF AUDITORY NOISE ON TIME-SHARING LOCALIZING THE TIME-SHARING EFFECT IN AN INPUT, AN OUTPUT OR IN A CENTRAL STAGE OF HUMAN INFORMATION PROCESSING; AND THE INFLUENCE OF VARIATIONS IN THE TRACKING TASK, VARIATIONS IN AUGMENTED FEEDBACK ACROSS TASKS, AND THE INFLUENCE OF AUDITORY NOISE ON DUAL-TASK PERFORMANCE.

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 634 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

TWO EXPERIMENTS ON THE EFFECTS OF COMBINED  
HEAT, NOISE AND VIBRATION STRESS,

(U)

72 8P GREYER, WALTER F. ;  
REPT. NO. AMRL-TR-71-113  
PROJ: AF-7222

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AGARD CONFERENCE  
PREPRINT NO. 101 ON PERFORMANCE AND BIODYNAMIC  
STRESS-INFLUENCE OF INTERACTING STRESSES ON  
PERFORMANCE, PC3-1-C3-7.

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), \*HEAT TOLERANCE),  
(\*NOISE, STRESS(PHYSIOLOGY)), (\*VIBRATION,  
STRESS(PHYSIOLOGY)), AVIATION MEDICINE, PILOTS,  
PERFORMANCE(HUMAN)

(U)

IDENTIFIERS: SYNERGISM

(U)

OPERATIONAL FLYING OFTEN EXPOSES CREW MEMBERS TO  
COMBINATIONS OF ENVIRONMENTAL STRESSES THAT MAY  
AFFECT FLIGHT PERSONNEL DIFFERENTLY THAN WOULD BE  
PREDICTED FROM SINGLE-STRESS LABORATORY EXPERIMENTS.  
TO OBTAIN A BETTER UNDERSTANDING OF SUCH COMBINED-  
STRESS EFFECTS A MAJOR EXPERIMENT WAS CONDUCTED USING  
HEAT (120F), NOISE (105 DB), AND VIBRATION  
(5 HZ, 0.30 PEAK G), BOTH SINGLY AND IN  
COMBINATION. MEASUREMENTS WERE MADE OF TRACKING  
ABILITY, CHOICE REACTION TIME, VOICE COMMUNICATION,  
MENTAL ARITHMETIC, VISUAL ACUITY, BODY TEMPERATURE,  
HEART RATE, WEIGHT LOSS, AND SUBJECTIVE RATINGS OF  
THE STRESS. ON NONE OF THESE MEASURES DID THE  
COMBINED TRIPLE-STRESS-CONDITION PRODUCE GREATER  
EFFECTS THAN DID THE MOST SEVERE SINGLE STRESS. ON  
THE PHYSIOLOGICAL MEASURES ONLY HEAT STRESS PRODUCED  
SIGNIFICANT EFFECTS, AND THE ADDITION OF NOISE AND  
VIBRATION PRODUCED NO FURTHER EFFECTS. ON THE  
PERFORMANCE MEASURES, PARTICULARLY THE TRACKING TEST,  
IMPAIRMENT WAS SLIGHTLY LESS FOR THE TRIPLE-STRESS  
CONDITION THAN FOR VIBRATION ONLY. THUS THERE WERE  
NO ADDITIVE INTERACTIONS, AND IN FACT SOME EVIDENCE  
OF ANTAGONISTIC INTERACTIONS. AS A CHECK ON THESE  
RESULTS A SECOND EXPERIMENT, WITH SLIGHT  
MODIFICATIONS WAS UNDERTAKEN. THIS EXPERIMENT  
YIELDED ESSENTIALLY THE SAME RESULTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 239 6/19  
CIVIL AEROMEDICAL INST OKLAHOMA CITY OKLA

AUDITORY EFFECTS OF NOISE ON AIR-CREW  
PERSONNEL,

(U)

NOV 72 IOP TOBIAS, JERRY V. ;  
MONITOR: FAA-AM 72-32

UNCLASSIFIED REPORT

DESCRIPTORS: (•AVIATION PERSONNEL, •NOISE), (•HEARING,  
THRESHOLDS(PHYSIOLOGY)), PILOTS, AVIATION MEDICINE,  
COCKPITS, PROTECTION, FLIGHT CREWS (U)

HEARING-THRESHOLD TESTS WERE MADE ON FLIGHT  
PERSONNEL OF SEVERAL SORTS, INCLUDING AERIAL-  
APPLICATION PILOTS, FLIGHT INSTRUCTORS, PRIVATE  
PILOTS, STEWARDESSES, AND FAA FLIGHT INSPECTORS.  
EXCLUDING THOSE PEOPLE WHOSE FLIGHT EXPERIENCE IS  
OF SHORT DURATION, EACH GROUP SHOWS SOME MEASURABLE  
DEGREE OF THRESHOLD SHIFT, ALTHOUGH THIS SHIFT IS  
FREQUENTLY NOT ENOUGH TO BE REGARDED AS A CLINICALLY  
SIGNIFICANT ENTITY. DATA ON THE SORTS OF NOISE  
EXPOSURES EACH GROUP COMMONLY RECEIVES ARE PRESENTED,  
AND SOME CAUTIONS ARE OFFERED REGARDING  
INTERPRETATION OF THE DATA. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 337 6/19  
NAVAL SUBMARINE MEDICAL RESEARCH LAB GROTON CONN

HEARING LOSS AT 3 KILOHERTZ AND THE CHABA  
'PROPOSED CLINICAL TEST OF SPEECH  
DISCRIMINATION IN NOISE'.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. NO. 8,  
JUL 72 10P MYERS, C. K. ;ANGERMEIER,  
CYNTHIA ;  
REPT. NO. NSMRL-720  
PROJ: M4305.08

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SPEECH, INTELLIGIBILITY), (\*NOISE,  
STRESS(PHYSIOLOGY)), (\*NAVAL PERSONNEL, NOISE),  
COMMUNICATION SYSTEMS, AUDITORY ACUITY, AUDIOMETRY,  
PERFORMANCE(HUMAN), NAVAL RESEARCH, MEDICAL RESEARCH (U)  
IDENTIFIERS: \*SPEECH DISCRIMINATION (U)

FORTY-EIGHT YOUNG MEN, 21 WITH RATHER SHARP  
AUDIOMETRIC LOSSES ABOVE 2 KILOHERTZ, WERE GIVEN A  
STANDARD TEST OF MONSYLLABLES IN NOISE. ON THE  
AVERAGE, THESE 47 MEN SCORED 10 FEWER WORDS CORRECT  
PER 100 THAN HAS BEEN REPORTED FOR NORMAL CONTROLS.  
SCATTERGRAMS OF PERFORMANCE VS A VARIETY OF PURE-  
TONE AND SPEECH THRESHOLD DATA, HOWEVER, SHOWED THAT  
NO AUDIOMETRIC INFORMATION COULD PREDICT PERFORMANCE  
IN NOISE. IT WAS CONCLUDED THAT THE STANDARDIZED  
SPEECH-IN-NOISE TEST ITSELF SHOULD BE CONSIDERED AS  
THE PREDICTOR INSTEAD OF THRESHOLD TESTS, AND THAT IT  
SHOULD BE VALIDATED AGAINST ACTUAL JOB PERFORMANCE.  
(AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 338 6/19  
NAVAL SUBMARINE MEDICAL RESEARCH LAB GROTON CONN

A COMPARISON OF SPEECH DISCRIMINATION ABILITY  
FOR SIMULATED AND REAL HEARING LOSS AT 3 AND  
6 KHZ,

(U)

JUL 72 13P SERGEANT, RUSSELL L. MURRY,  
THOMAS ;  
REPT. NO. NSMRL-721  
PROJ: M4306-03

UNCLASSIFIED REPORT

DESCRIPTORS: (•SPEECH RECOGNITION, DEAFNESS),  
(•DEAFNESS, NOISE), VOICE COMMUNICATIONS, MILITARY  
PERSONNEL, SUBMARINE PERSONNEL, AUDITORY PERCEPTION,  
STRESS(PHYSIOLOGY)

(U)

ENLISTED SUBMARINERS WITH HIGH-FREQUENCY HEARING  
LOSS (AVE. OF 22, 45 AND 60 DECIBELS AT 3, 4 AND 6  
KILOHERTZ, RESPECTIVELY) PERFORMED POORER THAN A  
NORMAL-HEARING CONTROL GROUP BY 6.2 PERCENTAGE POINTS  
ON RATHER EASY TESTS OF SPEECH INTELLIGIBILITY, AND  
BY 5 PERCENTAGE POINTS ON RATHER DIFFICULT TESTS  
CONTAINING SPEECH IN BACKGROUND NOISE. THE  
PERFORMANCE OF THE HEARING-LOSS GROUP, HOWEVER, FOR  
THE EASIER TESTS EXCEEDED BY 12.7 POINTS THAT OF  
ANOTHER NORMAL-HEARING CONTROL GROUP IN WHICH THE  
HEARING LOSS WAS SIMULATED BY FILTERING. THE  
HEARING-LOSS SUBJECTS MAY BE EXPERIENCE HAVE  
COMPENSATED TO SOME EXTENT IN EASIER SITUATIONS FOR  
THEIR DEFECT. THIS WAS NOT TRUE FOR THE MORE  
DIFFICULT SITUATIONS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 431 13/11 13/5 20/11  
VIRGINIA POLYTECHNIC INST BLACKSBURG DEPT OF MECHANICAL  
ENGINEERING

ISOLATION OF PIPING FROM PUMP VIBRATIONS,

(U)

NOV 72 105P MITCHELL, L. D. ;  
CONTRACT: N62470-72-C-1093

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED JUN 72.

DESCRIPTORS: (\*PIPES, \*VIBRATION ISOLATORS), (\*PUMPS,  
VIBRATION), EXPANSION JOINTS, SHOCK ABSORBERS, FLEXIBLE  
COUPLINGS, ANCHORS(STRUCTURAL), NOISE, ACOUSTIC  
IMPEDANCE, STRESS(PHYSIOLOGY), MATHEMATICAL MODELS,  
DAMPING, HUMAN FACTORS ENGINEERING, SPECIFICATIONS (U)  
IDENTIFIERS: NOISE POLLUTION, NOISE TRANSMISSION,  
DESIGN CRITERIA (U)

WHEN PIPING IS CONNECTED TO PUMPING SYSTEMS,  
UNWANTED VIBRATION AND/OR NOISE CAN BE TRANSMITTED  
FROM THE PUMP TO THE PIPING AND ULTIMATELY TO AN  
OBSERVER IN A WORKING OR LIVING SPACE AS NOISE. THE  
LOW FREQUENCY VIBRATION INDUCED IN PIPING CAN BE  
LARGE AND CAN CAUSE DAMAGE AND PIPE FAILURE. THE  
OBJECTIVE OF THE REPORT WAS TO PROVIDE GUIDELINES FOR  
EFFECTIVE SELECTION AND INSTALLATION OF FLEXIBLE PIPE  
CONNECTORS OR RESILIENT PIPE HANGERS IN AN EFFORT TO  
MINIMIZE OR ELIMINATE THIS PROBLEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 552 14/2 20/1 6/19  
WYLE LABS HUNTSVILLE ALA EASTERN OPERATIONS

ENVIRONMENTAL IMPACT OF NOISE FROM THE  
PROPOSED ARNOLD ENGINEERING DEVELOPMENT  
CENTER (AEDC) HIGH REYNOLDS NUMBER  
TUNNEL.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 13 MAR-30 JUN 72,  
MAR 73 181P PLOTKIN, K. J. ; ROBERTSON,  
J. E. ; COCKBURN, J. A. ;  
REPT. NO. WR-72-7-REV  
CONTRACT: F40600-72-C-0007  
MONITOR: AEDC TR-72-151-REV

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED OCT 72,  
AD-750 465.

DESCRIPTORS: (\*TRANSONIC WIND TUNNELS, NOISE), (\*NOISE,  
IMPACT), HUMANS, ANIMALS, BUILDINGS,  
TOLERANCES (PHYSIOLOGY), FRACTURE (MECHANICS), MODEL  
TESTS, REYNOLDS NUMBER, MATHEMATICAL PREDICTION, CONTROL  
SYSTEMS, WARNING SYSTEMS, ACOUSTIC INSULATION, MONITORS,  
STARTING, OPERATION (U)  
IDENTIFIERS: \*NOISE POLLUTION (U)

A STUDY TO EVALUATE THE ENVIRONMENTAL IMPACT OF THE  
NOISE PRODUCED BY A PROPOSED HIGH REYNOLDS NUMBER  
TUNNEL (HIRT) UNDER CONSIDERATION AT THE ARNOLD  
ENGINEERING DEVELOPMENT CENTER (AEDC) HAS  
BEEN CONDUCTED. THE STUDIES INCLUDE THEORETICAL  
ANALYSES OF THE NOISE GENERATION MECHANISMS  
ASSOCIATED WITH THE OPERATION OF THE FACILITY, AND  
SCALE-MODEL EXPERIMENTS TO PROVIDE BASE-LINE DATA FOR  
EXTRAPOLATION TO FULL-SCALE CONDITIONS. THIS  
ASSESSMENT CONTAINS ALL PERTINENT DATA OF RELEVANCE  
TO THE NOISE IMPACT WHICH MAY BE ANTICIPATED DURING  
HIRT OPERATION AND INCLUDES A SPECIFICATION OF  
ACCEPTABLE NOISE LIMITS FOR PEOPLE, ANIMALS AND  
BUILDINGS WHICH WILL BE EXPOSED TO HIRT NOISE, AND  
SPECIAL CONSIDERATIONS FOR NOISE PROTECTION AND  
CONTROL. (AUTHOR MODIFIED ABSTRACT)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 758 254 14/2 20/1  
NIELSEN ENGINEERING AND RESEARCH INC MOUNTAIN VIEW  
CALIF

A STUDY OF NARROW BAND NOISE GENERATION  
BY FLOW OVER VENTILATED WALLS IN TRANSONIC  
WIND TUNNELS, (U)

FEB 73 88P WOOLLEY, JAMES P. ;  
KARAMCHEYI, KRISHNAMURTY ;  
REPT. NO. NEAR-TR-50  
CONTRACT: F44620-72-C-0010  
PROJ: AF-9781  
TASK: 978102  
MONITOR: AFOSR TR-73-0503

UNCLASSIFIED REPORT

DESCRIPTORS: (\*TRANSONIC WIND TUNNELS, \*NOISE),  
NARROWBAND, ORIFICES, ACOUSTIC PROPERTIES, STABILITY,  
SHEAR STRESSES, FLOW FIELDS, TURBULENCE (U)  
IDENTIFIERS: \*NOISE POLLUTION, SHEAR LAYERS (U)

THE REPORT IS CONCERNED WITH THE PROBLEM OF  
ENVIRONMENTAL NOISE IN TRANSONIC WIND TUNNELS WITH  
VENTILATED, OR PERFORATED, WALLS. A BRIEF CRITICAL  
REVIEW OF PAST EXPERIMENTAL INVESTIGATIONS OF SUCH  
SOUNDS IS GIVEN. IT IS INDICATED THAT THE  
INSTABILITY OF THE SEPARATED SHEAR LAYER OVER THE  
CAVITIES IN A PERFORATED WALL SHOULD BE THE MAIN  
AGENCY FOR SOUND GENERATION. A STABILITY ANALYSIS  
OF A NONPARALLEL SHEAR FLOW IS UNDERTAKEN.  
RELATIONS SUCH AS THE STROUHAL NUMBERS AND  
MINIMUM BREADTHS, ARE GIVEN IN TERMS OF WIND-TUNNEL  
AERODYNAMIC PARAMETERS. (AUTHOR MODIFIED  
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 758 453 5/10 6/16  
LOUISVILLE UNIV KY PERFORMANCE RESEARCH LAB

HEARING CONSERVATION: INTENSE ACOUSTIC  
STIMULATION AND NOISE SUSCEPTIBILITY IN THE  
MILITARY ENVIRONMENT.

(U)

DESCRIPTIVE NOTE: SEMIANNUAL PROGRESS REPT. NO. 2, 1 APR  
72-31 MAR 73,

MAR 73 7P LOEB, MICHEL ; BROWN, BILL R.

REPT. NO. SAPR-2  
CONTRACT: DADA17-72-C-2039

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEARING, \*MILITARY MEDICINE), AUDITORY  
ACUITY, NOISE, AUDITORY PERCEPTION,  
THRESHOLDS(PHYSIOLOGY), HUMANS, LABORATORY ANIMALS (U)  
IDENTIFIERS: \*HEARING CONSERVATION (U)

THE REPORT DESCRIBES INVESTIGATIONS IN PROGRESS OF  
FIELD STUDIES ON CONSERVATION OF HEARING, INCLUDING  
LONGITUDINAL STUDIES BEGINNING IN BASIC TRAINING AND  
A COMPARISON OF BASIC TRAINEES WITH INSTRUCTORS, AND  
LABORATORY STUDIES OF TEMPORARY THRESHOLD SHIFT IN  
HUMANS AND STUDIES OF TEMPORARY AND PERMANENT  
THRESHOLD SHIFT IN ANIMALS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 758 588 20/1 1/5  
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C OFFICE OF  
ENVIRONMENTAL QUALITY

AIRCRAFT SOUND DESCRIPTION SYSTEM  
BACKGROUND AND APPLICATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAR 73 61P CRUZ, J. E. I  
REPT. NO. FAA-EQ-73-3

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT NOISE, \*AIRPORTS), PERIODIC  
VARIATIONS, EXPOSURE(PHYSIOLOGY),  
THRESHOLDS(PHYSIOLOGY), MEASUREMENT, TAKEOFF, AIRCRAFT  
LANDINGS (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*NOISE EXPOSURE,  
\*EXPOSURE TIME (U)

AN OBJECTIVE APPROACH TO DESCRIBING AIRCRAFT SOUND  
LEVELS FOR AREAS IN THE VICINITY OF AIRPORTS CALLED  
'AIRCRAFT SOUND DESCRIPTION SYSTEM' (ASDS),  
SUITABLE FOR BOTH MANUAL AND COMPUTER APPLICATION, IS  
SET FORTH. THE BASIC PREMISE OF THE CONCEPT IS TO  
STATE EXPOSURE TO AIRCRAFT SOUND IN TERMS OF THE  
AMOUNT OF TIME THAT SOUND LEVELS EXCEED A PRESELECTED  
THRESHOLD VALUE. THE RATIONALE SUPPORTING THE  
SELECTION OF THIS PROCEDURE, THE SELECTION OF THE  
THRESHOLD VALUE, AS WELL AS SOME OPERATING TIME  
CONSTANTS ARE COVERED TOGETHER WITH TWO HYPOTHETICAL  
APPLICATIONS. (AUTHOR MODIFIED ABSTRACT) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 212 1/2 20/1  
HYDROSPACE-CHALLENGER INC ROCKVILLE MD

RESULTS OF NOISE SURVEYS OF SEVENTEEN  
GENERAL AVIATION TYPE AIRCRAFT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 72 75P GRAY, DAMON C. ;  
CONTRACT: DOT-FA73WA-3179  
MONITOR: FAA-EQ 73-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT NOISE, STATISTICAL DATA),  
(\*CIVIL AVIATION, AIRCRAFT NOISE), PROPELLER NOISE,  
ENGINE NOISE, TAKEOFF, APPROACH, DATA PROCESSING (U)  
IDENTIFIERS: \*NOISE POLLUTION, NOISE, GENERAL AVIATION  
AIRCRAFT (U)

NOISE LEVELS, IN TERMS OF EPNL, PNL, DBA AND  
DBD ARE PRESENTED FOR BOTH JET AND PROPELLER-DRIVEN  
GENERAL AVIATION TYPE AIRCRAFT. THE NOISE LEVELS  
WERE DERIVED FROM MEASUREMENTS TAKEN BY THE FAA AND  
NASA/LRC AT THE NATIONAL AVIATION  
FACILITIES EXPERIMENTAL CENTER (NAFWC,  
ATLANTIC CITY, NEW JERSEY, DURING JUNE  
THROUGH SEPTEMBER 1972. LEVELS DERIVED FROM  
ACTUAL TAKE-OFF AND CONSTANT ALTITUDE FLY-BYS ARE  
PRESENTED WHEREVER POSSIBLE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 329 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

COMBINED EFFECTS OF NOISE AND VIBRATION ON  
HUMAN TRACKING PERFORMANCE AND RESPONSE  
TIME,

(U)

73 6P SOMMER, HENRY C. ; HARRIS, C.  
STANLEY I  
REPT. NO. AMRL-TR-72-83  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AEROSPACE MEDICINE, MAR  
73.

DESCRIPTORS: (•NOISE, •ATTENTION), (•VIBRATION,  
•ATTENTION), PERFORMANCE(HUMAN), STRESS(PHYSIOLOGY) (U)  
IDENTIFIERS: •VIGILANCE (U)

VIBRATION HAS BEEN SHOWN TO BE THE PRIMARY CAUSE OF  
PERFORMANCE IMPAIRMENT IN STUDIES OF THE COMBINED  
EFFECTS OF NOISE AND VIBRATION ON HUMAN TRACKING  
PERFORMANCE. NOISE HAS HAD LITTLE CONSISTENT  
EFFECT WHEN PRESENTED ALONE, AND HAS ADDED LITTLE OR  
NOT AT ALL TO THE IMPAIRMENT PRODUCED BY VIBRATION.  
IN TWO STUDIES WITH HEAT INCLUDED AS A THIRD  
STRESSOR, VIBRATION PRESENTED ALONE HAD A SLIGHTLY  
MORE ADVERSE EFFECT ON TRACKING PERFORMANCE THAN  
COMBINED HEAT, NOISE AND VIBRATION. IN THE PRESENT  
EXPERIMENT, 12 SUBJECTS WERE EXPOSED TO LOWER NOISE  
AND VIBRATION LEVELS FOR A LONGER PERIOD OF TIME THAN  
USED PREVIOUSLY. NOISE HAD NO SIGNIFICANT EFFECTS  
ON TRACKING PERFORMANCE, WHILE VIBRATION ADVERSELY  
AFFECTED BOTH DIMENSIONS OF THE TRACKING TASK. ON  
BOTH HORIZONTAL AND VERTICAL TRACKING, VIBRATION  
COMBINED WITH 60 DB NOISE PRODUCED GREATER  
IMPAIRMENT THAN VIBRATION COMBINED WITH 100 DB  
NOISE. THESE RESULTS PARALLEL PREVIOUS FINDINGS  
FROM STUDIES OF COMBINED NOISE, HEAT, AND VIBRATION,  
AND GIVE SUPPORT TO A SUBTRACTIVE INTERACTION  
INTERPRETATION OF THE COMBINED EFFECTS OF NOISE AND  
VIBRATION ON HUMAN TRACKING PERFORMANCE. (AUTHOR  
MODIFIED ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 721 17/1  
NAVAL SUBMARINE MEDICAL RESEARCH LAB GROTON CONN

PERFORMANCE ON THE EXPANDED TIME BEARING  
PLOT AS A FUNCTION OF BEARING ACCURACY. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT. NO. 1,  
JUN 72 38P OLSON, GARY M. ILAXAR, KEVIN

REPT. NO. NSMRL-716  
PROJ: MFS1.524  
TASK: MFS1.524.004

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SONAR TARGETS, DIRECTION FINDING),  
(\*SONAR SIGNALS, NOISE), ACCURACY, PERFORMANCE(HUMAN),  
CURVE FITTING, SUBMARINES, FIRE CONTROL SYSTEMS,  
STOCHASTIC PROCESSES, ERRORS (U)

TWO EXPERIMENTS ANALYZED THE EFFECTS OF STATISTICAL NOISE IN RAW SONAR BEARINGS ON PERFORMANCE IN A LABORATORY VERSION OF THE EXPANDED TIME BEARING PLOT. ACCURACY OF FAIRED BEARINGS AND BEARING RATE ESTIMATES WERE TAKEN AS THE MEASURES OF PERFORMANCE. GREATER AMOUNTS OF NOISE LED TO POORER PERFORMANCE, BUT THESE DECREMENTS WERE SMALLER WHEN THE NOISE WAS RANDOM THAN WHEN IT WAS CORRELATED. HUMAN PERFORMANCE WAS CONTRASTED WITH THAT OF AN ORTHOGONAL POLYNOMIAL CURVE FITTING ROUTINE DESIGNED TO DO THE SAME TASK. THE MATHEMATICAL ROUTINE WAS AFFECTED BY THE NOISE IN THE SAME WAY AS HUMANS WERE. HOWEVER, ON SIMPLE PLOTS THE MATHEMATICAL ROUTINE PROVIDED SUPERIOR SOLUTIONS WHILE ON CURVES OF MORE COMPLEX SHAPES OR AT THE ENDS OF CURVES HUMANS WERE SUPERIOR. THUS, IN CERTAIN SITUATIONS THE HUMAN'S PERCEPTUAL AND COGNITIVE ABILITIES GAVE HIM A DISTINCT ADVANTAGE OVER THE MATHEMATICAL ROUTINE. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 726 6/5  
NAVAL SUBMARINE MEDICAL RESEARCH LAB GROTON CONN

THE USE OF CIRCUMAUURAL EARPHONES FOR  
ATTENUATING AMBIENT NOISE IN BONE  
CONDUCTION AUDIOMETRY.

(U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT. NO. 23,  
OCT 72 17P ALFONSO PETER J. HARRIS,  
J. DONALD I  
REPT. NO. NSMRL-728  
PROJ: MF51.524  
TASK: MF51.524.004

UNCLASSIFIED REPORT

DESCRIPTORS: (•AUDIOMETRY, NOISE), BONES, HEARING,  
THRESHOLDS(PHYSIOLOGY), AUDITORY PERCEPTION,  
OTORHINOLARYNGOLOGY  
IDENTIFIERS: AMBIENT NOISE, EARPLUGS

(U)

(U)

AUDITORY SENSITIVITY TO A BONE-CONDUCTED (BC)  
ACOUSTIC STIMULUS IS INCREASED WHEN THE EAR CANAL IS  
PLUGGED('OCCLUSION EFFECT'), THUS INCREASING THE  
EARDRUM-OSSICLE COMPONENT. IT IS DESIRABLE TO PLUG  
THE EAR AGAINST EXTRANEIOUS AMBIENT SOUND DURING BC  
TESTING, BUT IT IS NOT DESIRABLE AT THE SAME TIME TO  
AFFECT THE BC THRESHOLD. IT IS FOUND THAT ONE OF  
THE NEW CIRCUMAUURAL EARMUFFS DOES A SUPERIOR JOB OF  
INSULATING THE EAR FROM AMBIENT SOUNDS, THUS ALLOWING  
BC TESTING IN OTHERWISE UNSATISFACTORILY NOISY  
AUDIOMETRIC WORKSPACES, WHILE AT THE SAME TIME  
CREATING SO LARGE A VOLUME OF AIR CONNECTED TO THE  
EAR CANAL THAT THE OCCLUSION EFFECT IS NEGLIGIBLE AT  
AUDIOMETRIC FREQUENCIES AS LOW AS 250 HZ. IT IS  
RECOMMENDED THAT IN SOME AUDIOMETRIC WORKSPACES SUCH  
EARMUFFS BE USED FOR BC AUDIOMETRY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 865 13/2 1/5  
URBAN SYSTEMS RESEARCH AND ENGINEERING INC CAMBRIDGE  
MASS

LAND USE CONTROL STRATEGIES FOR AIRPORT  
IMPACTED AREAS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. MAY 71-OCT 72.

OCT 72 173P

CONTRACT: DOT-FA71WA-2579

MONITOR: FAA-EQ 72-1

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRPORTS, NOISE), (\*URBAN PLANNING,  
AIRPORTS), COMPATIBILITY, FEASIBILITY STUDIES, CONTROL,  
ECONOMICS (U)

IDENTIFIERS: NOISE POLLUTION, LAND USE ZONING, \*LAND  
USE (U)

CONVERTING LAND NEAR AIRPORTS FROM RESIDENTIAL AND  
OTHER AIRPORT-INCOMPATIBLE USES TO COMMERCIAL,  
INDUSTRIAL, OR OTHER AIRPORT-COMPATIBLE USES PROVIDES  
A POTENTIAL SOLUTION TO THE AIRPORT NOISE PROBLEM.  
THE STUDY DEVELOPED A METHODOLOGY FOR ANALYZING THE  
FEASIBILITY OF REDEVELOPMENT AND APPLIED IT IN FOUR  
CASE STUDY AIRPORT AREAS: LOS ANGELES  
INTERNATIONAL, MIAMI INTERNATIONAL, LONG  
ISLAND-MACARTHUR (ISLIP, N.Y.), AND  
AALLAS-FORT WORTH. THE STUDY EXAMINED  
EXISTING LAND USE PATTERNS, THE IMPACT OF CURRENT  
LAND USE CONTROLS, PRICES FOR INCOMPATIBLE LAND, THE  
MARKET FOR COMPATIBLE REUSES OF IMPACTED LAND,  
COMMUNITY PARTICIPATION IN REDEVELOPMENT, AND  
INSTITUTIONAL AND POLITICAL BARRIERS TO SUCCESSFUL  
REDEVELOPMENT. THE STUDY FOUND INCOMPATIBLE LAND  
USES PREVALENT AND INCREASING IN ALL AREAS.  
REDEVELOPMENT WAS FOUND TO BE AN EFFECTIVE AND  
PERMANENT BUT GENERALLY VERY EXPENSIVE SOLUTION,  
BECAUSE OF HIGH LAND ACQUISITION COSTS AND LOW DEMAND  
FOR REUSES. REDEVELOPMENT CAN BE JUSTIFIED ONLY IN  
SELECTED, SMALL, HEAVILY IMPACTED AREAS. PRE-  
EMPTION OF VACANT LAND AND EFFECTIVE ZONING AND LAND  
USE PLANNING ARE OTHER OPTIONS FOR LAND USE CONTROL  
STRATEGY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 982 6/11 20/1  
NAVY EXPERIMENTAL DIVING UNIT WASHINGTON D C

TEST OF BENDIX AIR FILTERS USED AS  
MUFFLERS.

(U)

DESCRIPTIVE NOTE: LETTER REPT.,  
SEP 71 8P REIMERS,STEPHEN D. ;  
REPT. NO. NEDU-LR-8-71

UNCLASSIFIED REPORT

DESCRIPTORS: (\*DECOMPRESSION, NOISE), (\*GAS FILTERS,  
RELIABILITY), (\*NOISE, GAS FILTERS), REDUCTION, EXHAUST  
SYSTEMS, HAZARDS, TEST METHODS, LIFE SUPPORT (U)  
IDENTIFIERS: MUFFLERS, AIR FILTERS, SILENCERS,  
\*HYPERBARIC CHAMBERS (U)

EXCESSIVE NOISE, COMING MAINLY FROM AIR SUPPLY AND  
EXHAUST LINES, HAS RECENTLY BECOME RECOGNIZED AS A  
SERIOUS HAZARD TO HYPERBARIC CHAMBER PERSONNEL. A  
BENDIX AIR FILTER NO. 057619 WAS TESTED BY THE  
NAVY EXPERIMENTAL DIVING UNIT AS A POTENTIAL  
MUFFLER FOR THESE SYSTEMS. THE FILTER WAS FOUND TO  
PRODUCE A 30DBA REDUCTION IN THE SOUND LEVEL  
PRODUCED BY THE AIR SUPPLY LINE IN EDU'S NO. 5  
RECOMPRESSION CHAMBER. THE FILTER, BEING  
COMBUSTIBLE, WAS, HOWEVER, JUDGED A FIRE HAZARD AND  
WORK WITH IT HAS BEEN TERMINATED IN FAVOR OF WORK  
WITH ALL METAL FILTERS AND SILENCERS. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 761 669 20/1 13/10  
ANDRULIS RESEARCH CORP BETHESDA MD

A STUDY OF SHIPBOARD NOISE CRITERIA.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAY 73 58P ANDRULIS, MARILYN W. ; MAGRAB,  
EDWARD B. ;  
REPT. NO. ARC-TR-73-0159.1  
CONTRACT: N00014-73-C-0159

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SHIP NOISE, CLASSIFICATION),  
STANDARDIZATION, MEASUREMENT, SHIP AUXILIARY EQUIPMENT,  
SHIP STRUCTURAL COMPONENTS, CONTROL, BROADBAND, SPEECH  
RECOGNITION, INTERFERENCE, NAVAL RESEARCH (U)  
IDENTIFIERS: LOUDNESS, METRIC SYSTEM, NOISE  
POLLUTION (U)

THE STUDY ON SHIPBOARD NOISE CRITERIA IS  
PRIMARILY CONCERNED WITH THE CONTRACTUAL VIABILITY OF  
SINGLE-NUMBER METRIC STANDARDS FOR SHIPBOARD  
EQUIPMENT AND SPACES. AS AN INITIAL STEP TOWARD  
PROVIDING TRANSITION GUIDELINES FROM OCTAVE BAND TO  
DBA STANDARDS, ANDRULIS RESEARCH CORPORATION  
(ARC) HAS DEVISED A METHODOLOGY BASED ON  
STATISTICAL CONSIDERATIONS FOR THE CLASSIFICATION OF  
EQUIPMENT AND OF SPACES IN TERMS OF SINGLE-NUMBER  
METRICS. IMPLEMENTATION OF THE ARC SCHEME SHOULD  
NOT ONLY CLARIFY THE FEASIBILITY OF CLASSIFYING  
FREQUENCY-DEPENDENT EQUIPMENT AND SPACES IN TERMS OF  
SINGLE-NUMBER METRICS, AND OF PREDETERMINING LAYOUT  
DESIGNS AND NOISE CONTROL PROCEDURES, BUT ALSO THE  
PRACTICABILITY OF THE CURRENTLY PROPOSED DBA  
LEVELS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 762 988 6/19  
CIVIL AEROMEDICAL INST OKLAHOMA CITY OKLA

SIMULATED SONIC BOOMS AND SLEEP: EFFECTS  
OF REPEATED BOOMS OF 1.0 PSF, (U)

DEC 72 31P COLLINS, WILLIAM E. ;  
IAMPETRO, P. F. ;  
PROJ: FAA-AM-B-70-PSY-24, FAA-AM-B-71-PSY-24  
MONITOR: FAA-AM 72-35

UNCLASSIFIED REPORT

DESCRIPTORS: (\*SLEEP, \*SONIC BOOM), NOISE,  
STRESS(PHYSIOLOGY), ACCLIMATIZATION, PSYCHOPHYSIOLOGY,  
AGING(PHYSIOLOGY) (U)  
IDENTIFIERS: \*NOISE POLLUTION (U)

EIGHT MALE SUBJECTS IN EACH OF THREE AGE GROUPS  
(21-26, 40-45, 60-72 YEARS) SLEPT IN PAIRS IN THE  
CAMI SONIC BOOM SIMULATION FACILITY FOR 21  
CONSECUTIVE NIGHTS. THE FIRST FIVE NIGHTS WERE  
USED TO ACCLIMATE THE SUBJECTS (NIGHTS 1 AND 2)  
AND TO OBTAIN BASELINE DATA (NIGHTS 3-5); THE  
12 SUBSEQUENT NIGHTS (BOOM) INVOLVED THE HOURLY  
PRESENTATION OF SIMULATED SONIC BOOMS AT AN  
OVERPRESSURE LEVEL OF 1.0 PSF (AS THOUGH MEASURED  
'OUTDOORS'); DURING FOUR ADDITIONAL NIGHTS  
(RECOVERY) THERE WERE NO BOOM PRESENTATIONS.  
ALL-NIGHT RECORDS OF EEG, EOG, EMG, ECG,  
AND BSR WERE OBTAINED AND ANALYZED. NONE OF  
THESE PHYSIOLOGICAL MEASURES SHOWED ANY STATISTICALLY  
SIGNIFICANT EFFECT OF THE BOOM PRESENTATIONS ON  
NIGHTLY SLEEP PATTERNS. (MODIFIED AUTHOR  
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 764 739 6/19  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

MIDDLE-EAR MUSCLE REFLEX TO AIRCRAFT  
NOISE.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. APR 72-MAR 73,  
JUL 73 16P SUTHERLAND, HARRELL C. , JR. ;  
DANFORD, ROY , JR. ; GASAWAY, DONALD C. ;  
REPT. NO. SAM-TR-73-20  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: (•EAR, AIRCRAFT NOISE), (•HEARING, AIRCRAFT  
NOISE), NOISE, MUSCLES, REFLEXES, INTENSITY,  
THRESHOLDS(PHYSIOLOGY)  
IDENTIFIERS: MIDDLE EAR

(U)

(U)

MIDDLE-EAR MUSCLE REFLEX THRESHOLD WITH THREE TYPES  
OF AIRCRAFT NOISE AND WITH A 1000-HZ PURE TONE WAS  
SOUGHT WITH 21 RATED FLYING PERSONNEL. THREE  
SUBJECTS FAILED TO RESPOND TO THE NOISE AT MAXIMUM  
INTENSITY (108-DB SPL). AVERAGE REFLEX  
THRESHOLD IN DB SPL FOR THE OTHER 18 SUBJECTS WAS  
94.8 DB FOR THE 1000-HZ TONE, 95.2 DB FOR T-  
37B NOISE, 98.8 DB FOR UH-1P NOISE, AND 94.4  
DB FOR F-4E NOISE. THRESHOLD FOR THE UH-  
1P NOISE WAS SIGNIFICANTLY HIGHER THAN THRESHOLDS  
FOR THE OTHER SOUNDS. NO OTHER DIFFERENCES WERE  
SIGNIFICANT. THRESHOLD SPLS ARE WELL WITHIN THE  
RANGE OF INTENSITIES COMMONLY PRESENT IN AIRCRAFT,  
WHICH SUGGESTS THAT THIS REFLEX BE CONSIDERED IN ANY  
STUDY DEALING WITH THE EFFECTS OF AIRCRAFT NOISE ON  
OCCUPANTS. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 765 419 6/19  
HUMAN ENGINEERING LAB ABERDEEN PROVING GROUND MD

NOISE AND BLAST.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,  
JUN 73 67P HODGE, DAVID C. ; GARIN, R. ;  
GEORGES R. ;  
REPT. NO. HEL-TM-10-73

UNCLASSIFIED REPORT

DESCRIPTORS: (\*STRESS(PHYSIOLOGY), \*NOISE),  
(\*STRESS(PSYCHOLOGY), NOISE), (\*HEARING, NOISE),  
DEAFNESS, BLAST, MEASUREMENT, PERFORMANCE(HUMAN),  
BEHAVIOR, INDUSTRIAL MEDICINE, URBAN AREAS  
IDENTIFIERS: \*NOISE POLLUTION

(U)

(U)

THE EFFECTS OF NOISE AND BLAST UPON MAN ARE COMPLEX AND VARIED. ALTHOUGH THIS REPORT IS DIRECTED PRIMARILY TOWARD THE NOISE PRODUCED DURING SPACE ACTIVITIES THE EFFECTS UPON MAN WILL BE SIMILAR REGARDLESS OF THE SPECIFIC NOISE SOURCE. DATA ARE PRESENTED DEALING WITH PHYSICAL ACOUSTICS, THE CHARACTERISTICS OF SOUND AND APPROPRIATE NOISE MEASUREMENTS. HEARING LOSS RESULTING FROM BOTH STEADY-STATE AND IMPULSE NOISE IS DISCUSSED ALONG WITH THE FACTORS INFLUENCING ITS ACQUISITION AND RECOVERY AND THE RESULTANT EFFECTS UPON PERFORMANCE. SUBJECTIVE AND BEHAVIORAL RESPONSE TO NOISE IS DISCUSSED IN TERMS OF MASKING OF AUDITORY SIGNALS AND SPEECH, ANNOYANCE AND GENERAL OBSERVATION. CURRENT RESEARCH IN THE AREA OF NONAUDITORY EFFECTS IS REVIEWED VARYING FROM CARDIOVASCULAR ALTERATIONS TO THE RISK OF DEATH. CURRENT DESIGN CRITERIA ARE PRESENTED FOR BOTH STEADY-STATE AND IMPULSE NOISE FOR BOTH WORKSPACES AND COMMUNITIES. (AUTHOR)  
PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 766 085 6/16 5/10  
MEMPHIS STATE UNIV TENN DEPT OF PSYCHOLOGY

CONVENTIONAL AND HIGH FREQUENCY HEARING OF  
NAVAL AIRCREWMEN AS A FUNCTION OF NOISE  
EXPOSURE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. MAY 71-AUG 73,  
AUG 73 47P FLETCHER, JOHN L. ;  
REPT. NO. HRL/2  
CONTRACT: N00014-71-C-0354  
PROJ: NR-197-002

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HEARING, HIGH FREQUENCY), (\*AVIATION  
PERSONNEL, HEARING), EXPOSURE(PHYSIOLOGY), NOISE,  
AUDITORY PERCEPTION, AUDIOMETRY, DEAFNESS, NAVAL  
PERSONNEL, PILOTS

(U)

IDENTIFIERS: HEARING, LOSSES, HEARING  
CONSERVATION

(U)

CONVENTIONAL (.5, 1, 2, 3, 4, AND 6 KHZ) AND  
HIGH FREQUENCY (8, 9, 10, 11, 12, 13, 14, 15, 16,  
AND 18 KHZ) HEARING WAS TESTED OF US NAVY  
AVIATORS FLYING PRIMARILY PROP, JET, OR HELICOPTER  
AIRCRAFT FOR VARYING AMOUNTS OF HOURS. RESULTS  
SHOW A PROGRESSIVE DECLINE IN HEARING AS A FUNCTION  
OF NUMBER OF HOURS FLIGHT TIME. THEY ALSO REVEAL  
HIGH FREQUENCY HEARING TO BE MOST AFFECTED AS WELL AS  
EARLIER TO DETERIORATE FROM NOISE EXPOSURE. THESE  
RESULTS SUGGEST HIGH FREQUENCY HEARING TESTING COULD  
BE OF SIGNIFICANT VALUE IN HEARING CONSERVATION  
PROGRAMS IN EARLY DETECTION OF LOSS AND IN EVALUATING  
EFFECTIVENESS OF HEARING CONSERVATION MEASURES.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 766 326 6/19  
MAN-ACOUSTICS AND NOISE INC SEATTLE WASH

THE EFFECT OF SIMULATED SONIC BOOM RISE  
TIME AND OVERPRESSURE ON  
ELECTROENCEPHALOGRAPHIC WAVEFORMS AND  
DISTURBANCE JUDGMENTS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUL 73 39P MABRY, J. E. ; PARRY, H. J.

;  
REPT. NO. MAN-1004  
CONTRACT: DOT-FA73WA-3213  
PROJ: FAA-202-554-015  
MONITOR: FAA-RD 73-115

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ELECTROENCEPHALOGRAPHY, \*SONIC BOOM),  
(\*NOISE, \*SLEEP), SIMULATION, STRESS(PHYSIOLOGY),  
AIRCRAFT NOISE, JET AIRCRAFT (U)

THE THREE MAIN OBJECTIVES OF THIS STUDY WERE AS  
FOLLOWS: DETERMINE THE FEASIBILITY OF  
INVESTIGATING EFFECT OF SIMULATED SONIC BOOMS ON SOME  
SLEEP PATTERNS OF PERSONS UNDERGOING ROUTINE  
ELECTROENCEPHALOGRAPHIC (EEG) EXAMINATIONS;  
DETERMINE THE EXTENT THAT EEG WAVEFORMS ARE ALTERED  
BY THE SIMULATED SONIC BOOMS; AND OBTAIN  
'DISTURBANCE', JUDGMENTS AS A FUNCTION OF THE  
SIMULATED BOOM NOISES. RESULTS WERE OBTAINED FROM  
FIFTY (50) SUBJECTS OF BOTH SEXES WITH AGES  
RANGING FROM 15 TO 72 YEARS OF AGE. DATA WAS  
RELEVANT TO RESTING, DOZING, OR LIGHT SLEEP. THE  
EEG WAVEFORMS FOR RESTING OR DOZING PERSONS WAS NOT  
CHANGED BY THE SIMULATED BOOM NOISES. IN GENERAL,  
THE SUBJECTS WERE NOT, 'DISTURBED', BY THE SIMULATED  
BOOMS. NINETY-TWO (92) PERCENT OF THE SUBJECTS  
REPORTED NO, 'DISTURBANCE', TO ANY OF THE SIMULATED  
BOOMS PRESENTED. TWO RISE TIMES OF 15 AND 7 MS  
WERE EMPLOYED WITH OVERPRESSURES RANGING FROM 0.94 TO  
2.85 PSF. (AUTHOR) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 766 498 6/19  
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

THE EFFECT OF NOISE EXPOSURE DURING PRIMARY  
FLIGHT TRAINING ON THE CONVENTIONAL AND HIGH  
FREQUENCY HEARING OF NAVAL AVIATION OFFICER  
CANDIDATES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
AUG 73 34P ROBERTSON, RONALD M. ;  
WILLIAMS, CARL E. ;  
REPT. NO. NAMRL-1190

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-739 368.

DESCRIPTORS: (•HEARING, AIRCRAFT NOISE), (•AIRCRAFT  
NOISE, FLIGHT CREWS), AVIATION PERSONNEL, NAVAL  
PERSONNEL, NOISE, EXPOSURE(PHYSIOLOGY),  
THRESHOLDS(PHYSIOLOGY), AUDIOMETRY, SPEECH  
RECOGNITION

(U)

THE INVESTIGATION WAS DESIGNED TO EXPLORE THE  
RELATIONSHIP BETWEEN AVIATION NOISE EXPOSURE HISTORY  
AND HIGH-FREQUENCY HEARING SENSITIVITY. THE NAMRL  
PORTION OF THE STUDY FOCUSED ON ADMINISTERING  
CONVENTIONAL AUDIOMETRY, HIGH-FREQUENCY AUDIOMETRY  
(4 KHZ - 18 KHZ), AND A SPEECH  
INTELLIGIBILITY TEST IN NOISE TO 108 NAVAL  
AVIATION OFFICER CANDIDATES PRIOR TO THE  
FOLLOWING PRIMARY FLIGHT TRAINING (APPROXIMATELY  
25-28 HOURS) IN T-34 AIRCRAFT. HEARING  
PROTECTION CONSISTED OF EITHER THE APH-6C OR  
APH-6D FLIGHT HELMET. COCKPIT NOISE LEVELS IN  
THE T-34 RANGE FROM 96-115 DBA; DURING CRUISE THE  
NOISE LEVEL IS APPROXIMATELY 100 DBA. RESULTS  
INDICATE NO SIGNIFICANT CHANGE IN HEARING SENSITIVITY  
OR SPEECH DISCRIMINATION THAT COULD BE ATTRIBUTED TO  
NOISE EXPOSURE DURING PRIMARY FLIGHT TRAINING.  
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 767 204 6/19 6/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

RELATION BETWEEN DAILY NOISE EXPOSURE AND  
HEARING LOSS BASED ON THE EVALUATION OF 6,835  
INDUSTRIAL NOISE EXPOSURE CASES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JUN 73 39P BAUGHN, WILLIAM L. ;  
REPT. NO. AMRL-TR-73-53  
PROJ: AF-7230

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
ENVIRONMENTAL PROTECTION AGENCY, REPT. NO. EPA-550-  
73-001-C. SEE ALSO AD-767 205.

DESCRIPTORS: (\*NOISE, \*HEARING), (\*INDUSTRIAL MEDICINE,  
NOISE), THRESHOLDS(PHYSIOLOGY), EXPOSURE(PHYSIOLOGY),  
AUDIOMETRY, DEAFNESS, AUDITORY ACUITY,  
OTORHINOLARYNGOLOGY

(U)

IDENTIFIERS: \*NOISE POLLUTION

(U)

THE STUDY IS DESIGNED TO DISPLAY THE PERCENT OF A  
POPULATION EXHIBITING GREATER THAN CERTAIN SPECIFIED  
AUDIOMETRIC HEARING LEVELS AS A FUNCTION OF SPECIFIED  
EXPOSURE LEVELS AND DURATION OF EXPOSURES TO THOSE  
LEVELS. AUDIOMETRIC DATA FROM 6835 EMPLOYEES OF AN  
INDUSTRIAL PLANT WERE TAKEN DURING THE PERIOD FROM  
1960 THROUGH 1965. THE EMPLOYEES WERE SELECTED  
ONLY ON THE CRITERION THAT THEIR NOISE EXPOSURES WERE  
REASONABLY WELL KNOWN. HEARING LEVELS FOR EACH OF  
THREE EXPOSURE CONDITONS (78, 86, AND 92 DBA)  
WERE OBTAINED FOR THE SPEECH (0.5, 1, AND 2  
KHZ) AND THE 4 KHZ AUDIOMETRIC FREQUENCIES.  
THE DATA ARE SMOOTHED AND HEARING RISK TABLES ARE  
PRESENTED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 767 205 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

PREDICTION OF NIPTS DUE TO CONTINUOUS NOISE  
EXPOSURE.

(U)

DESCRIPTIVE NOTE: JOINT EPA/USAF STUDY,  
JUL 73 67P JOHNSON, DANIEL L. ;  
REPT. NO. AMRL-TR-73-91  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH  
ENVIRONMENTAL PROTECTION AGENCY, REPT. NO. EPA-550/  
9-73-001-B. SEE ALSO AD-767 204.

DESCRIPTORS: (\*NOISE, THRESHOLDS(PHYSIOLOGY)),  
(\*HEARING, NOISE), AUDIOMETRY, EXPOSURE(PHYSIOLOGY),  
HAZARDS, DEAFNESS, AUDITORY ACUITY, FREQUENCY (U)  
IDENTIFIERS: \*NOISE POLLUTION, \*HEARING  
CONSERVATION (U)

THE REPORT COMPARES THE RELATIONSHIP OF NOISE  
EXPOSURE TO NOISE INDUCED PERMANENT THRESHOLD SHIFT  
(NIPTS) AS PREDICTED BY THE CURRENTLY AVAILABLE  
WORKS OF PASSCHIER-VERMEER, ROBINSON, BAUGHN  
AND KRYTER, AND THE YET UNPUBLISHED WORK OF THE  
NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND  
HEALTH. THE WORKS OF PASSCHIER-VERMEER,  
ROBINSON, AND BAUGHN ARE SELECTED SINCE THESE ARE  
THE ONLY WORKS THAT COMPLETELY PREDICT THE  
RELATIONSHIP BETWEEN NIPTS AND NOISE EXPOSURE FOR  
VARIOUS AUDIOMETRIC FREQUENCIES, SOUND PRESSURE  
LEVELS AND POPULATION PERCENTILES. THE PREDICTIONS  
OF THESE THREE METHODOLOGIES ARE AVERAGED IN ORDER TO  
PROVIDE ONE SINGLE RELATIONSHIP BETWEEN CONTINUOUS  
NOISE EXPOSURE AND NIPTS. THIS RELATIONSHIP IS  
PRESENTED IN VARIOUS WAYS SO THAT THE EFFECT OF NOISE  
EXPOSURE ON HEARING CAN BE VIEWED IN MORE THAN ONE  
WAY. DISCUSSION CONCERNING THE TYPE OF FREQUENCY  
WEIGHTING, THE EQUAL ENERGY RULE, AND LONG DURATION  
EXPOSURES IS ALSO PROVIDED. (MODIFIED AUTHOR  
ABSTRACT) (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 767 222 20/1 6/19  
ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

THE EFFECT OF HELICOPTER NOISE ON  
COMMUNICATION AND HEARING.

(U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT TECHNICAL  
REPT.,

AUG 73 160P GIORDANO, THOMAS A. ; KEANE,  
GERARD C. ;

REPT. NO. ECOM-4140

PROJ: DA-1-T-061101-A-91-A, DA-1-F-263207-DB-  
97

TASK: 1-T-061101-A-91-A-30, 1-F-263207-DB-9701

UNCLASSIFIED REPORT

DESCRIPTORS: (\*HELICOPTERS, \*NOISE), (\*HEARING,  
\*HAZARDS), (\*VOICE COMMUNICATIONS, INTELLIGIBILITY),  
STRESS(PHYSIOLOGY), ACOUSTICS, PROBLEM SOLVING, HELMETS,  
EAR PROTECTORS, TIME, DAMAGE, MICROPHONES, SIGNAL-TO-  
NOISE RATIO (U)

IDENTIFIERS: MICROPHONES, NOISE REDUCTION, CH-47  
AIRCRAFT, HEARING, LOSSES, \*HELICOPTERS,  
\*NOISE(SOUND), COMPUTER ANALYSIS (U)

THE EFFECTS OF CH-47 (CHINOOK) HELICOPTER NOISE  
ON THE AVIATOR'S HEARING AND ON COMMUNICATION SYSTEM  
INTELLIGIBILITY ARE SERIOUS ONES. THE EFFORT  
DESCRIBED BY THIS REPORT IS AIMED AT REDUCING THE  
SOUND PRESSURE LEVELS AT THE AVIATOR'S EARS WHILE  
MAINTAINING HIGH INTELLIGIBILITY AND QUALITY IN THE  
COMMUNICATION SYSTEM. THE OVERALL PROBLEM IS FIRST  
DEFINED. THE NOISE LEVELS INSIDE ALL AREAS OF THE  
CH-47 WERE FOUND TO EXCEED THE HEARING DAMAGE RISK  
CRITERIA SET FORTH BY THE SURGEON GENERAL.  
EVEN WITH HEARING PROTECTORS, THE AVIATOR IS  
LIMITED TO THE TIME HE MAY FLY WITHOUT UNDUE RISK TO  
HIS HEARING. THE ELECTRICAL CHARACTERISTICS OF THE  
COMMUNICATION SYSTEM WERE DETERMINED. NON-LINEAR  
FREQUENCY RESPONSES OF THE MICROPHONE AND EARCUP WERE  
DETECTED. THESE RESONANCES CAUSE EMPHASIS OF THOSE  
FREQUENCIES IN WHICH THE EAR IS MOST SENSITIVE.  
THE POOR NOISE CANCELLING ABILITY OF THE M-87  
MICROPHONE AT HIGH FREQUENCIES CAUSE LOW SIGNAL TO  
NOISE RATIOS IN THE COMMUNICATION SYSTEM. AN  
INTELLIGIBILITY VS. IN-EAR DBA LEVEL STUDY WAS RUN  
TO EVALUATE THE POTENTIAL SUCCESS OF AN 'IDEAL'  
PERFECT NOISE CANCELLING MICROPHONE AND OTHER  
MICROPHONE MODIFICATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 767 274 6/19  
DAYTON UNIV OHIO RESEARCH INST

A BASIS FOR LIMITING NOISE EXPOSURE FOR  
HEARING CONVERSATION.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,  
JUL 73 159P GUIGNARD, J. C. ;  
REPT. NO. UDR1-TR-73-29  
CONTRACT: F33615-72-C-1402  
PROJ: AF-7231  
TASK: 723103  
MONITOR: AMRL, EPA TR-73-90,550/9-73-001-A

UNCLASSIFIED REPORT

DESCRIPTORS: (•NOISE, •HEARING), (•DEAFNESS, NOISE),  
AUDIOMETRY, AUDITORY ACUITY, EXPERIMENTAL DATA,  
PHYSIOLOGY, STRESS(PHYSIOLOGY)

(U)

A COMPILATION OF DATA IS PROVIDED, WITH REFERENCES  
TO PUBLISHED WORK, WHICH REPRESENTS THE PRESENT STATE  
OF KNOWLEDGE CONCERNING THE EFFECTS OF CONTINUOUS AND  
IMPULSIVE NOISE ON HEARING. THE DANGER TO THE EAR  
OF BOTH OCCUPATIONAL AND NONOCCUPATIONAL HUMAN  
EXPOSURE TO NOISE IS CONSIDERED. DATA ARE INCLUDED  
OR CITED WHICH ENABLE QUANTITATIVE PREDICTIONS TO BE  
MADE OF THE RISK TO HEARING IN THE AMERICAN  
POPULATION DUE TO NOISE EXPOSURE IN ANY WORKING OR  
LIVING CONTEXT. RECOMMENDATIONS ARE MADE CONCERNING  
THE NEED TO OBTAIN MORE DEFINITIVE DATA. RELEVANT  
ASPECTS OF NOISE ON THE EAR ARE DISCUSSED IN  
APPENDICES TO THE MAIN REPORT. THE REPORT DEALS  
SOLELY WITH THE EFFECTS OF NOISE ON HEARING; OTHER  
PHYSIOLOGICAL OR PSYCHOLOGICAL EFFECTS OF NOISE ARE  
NOT CONSIDERED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 768 223 5/9  
VIRGINIA COMMONWEALTH UNIV RICHMOND DEPT OF  
PSYCHOLOGY

USES OF VIBRATION IN HELICOPTER FLYING. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 DEC 68-31 AUG 72,  
JUL 73 83P HAWKES, GLENN R. ; KATZ, GARY  
M. ; RAY, WILLIAM S. ;  
REPT. NO. PRI-73  
CONTRACT: DADA17-69-C-9063

UNCLASSIFIED REPORT

DESCRIPTORS: (\*PERCEPTION, \*HELICOPTERS), (\*PILOTS,  
TRAINING), PERFORMANCE(HUMAN), VIBRATION, NOISE,  
RESPONSE(BIOLOGY), TEST METHODS, TIME, ANALYSIS OF  
VARIANCE, ATTENTION, PERFORMANCE(HUMAN), ATTRITION,  
ACCURACY (U)  
IDENTIFIERS: STIMULUS RESPONSE, JUDGMENT (U)

SEVEN RESEARCH STUDIES AND A SUMMARY PAPER ARE  
DESCRIBED IN THE REPORT. THE TASK SITUATION IS  
THAT OF THE HELICOPTER PILOT WHO MUST MAINTAIN VISUAL  
CONTACT WITH AN ENVIRONMENT OUTSIDE THE AIRCRAFT, AND  
RESPOND TO TURBULENCE AND OTHER REQUIREMENTS FOR  
CONTROL SURFACE ADJUSTMENTS FROM NOISE AND VIBRATION  
CUES. TIME JUDGMENTS OF THESE CUES WERE STUDIED  
WITH FINDINGS SUCH AS FOLLOWS: NOISE AND  
VIBRATION ARE JUDGED ABOUT EQUALLY WELL IN MOST  
SITUATIONS; NOISY VS. QUIET BACKGROUNDS HAVE LITTLE  
EFFECT ON PERFORMANCE; WHEN RESPONDING TO SIGNALS,  
PILOTS MAY OVER-REACT, OR THEY MAY UNDER-REACT IF  
THEY INITIATE MANEUVERS. OTHER RESPONSES ARE NOTED  
AND DISCUSSED WITH RESPECT TO VIBRATORY AND NOISE  
STIMULI THAT COULD BE OF VALUE, IN THE TRAINING OF  
PILOTS FOR OPERATIONAL USE OF HELICOPTERS. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 770 185 5/10  
SOCIETY OF AUTOMOTIVE ENGINEERS INC NEW YORK

AN EVALUATION OF PSYCHOACOUSTIC PROCEDURES  
FOR DETERMINING HUMAN RESPONSE TO AIRCRAFT  
NOISE. VOLUME 1. SPECIFICATIONS FOR FOUR  
EXPERIMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

OCT 73 66P  
REPT. NO. SAE-R-12-1  
CONTRACT: DOT-FA71WA-2673  
MONITOR: FAA-RD 72-51-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-770 244.

DESCRIPTORS: \*AIRCRAFT NOISE, \*PSYCHOACOUSTICS,  
\*RESPONSE, HUMAN FACTORS ENGINEERING, TEST  
METHODS, LABORATORY PROCEDURES, TAPE RECORDING,  
SPECIFICATIONS, REQUIREMENTS

(U)

ABSENCE OF GOOD AGREEMENT AMONG LABORATORY STUDIES  
INVOLVING HUMAN RESPONSE TO AIRCRAFT NOISE LED TO THE  
CONCLUSION THAT THE APPLICATION OF DIFFERENT  
PSYCHOACOUSTIC PROCEDURES COULD ACCOUNT FOR DIFFERING  
CONCLUSIONS. SINCE THERE IS A CONTINUING  
REQUIREMENT TO DEVELOP AN ENGINEERING CALCULATION  
PROCEDURE WHICH VALIDLY REFLECTS RESPONSE TO FLYOVER  
NOISE FROM FUTURE AIRCRAFT (STOL, VTOL, SST), A  
THREE-PHASE PROGRAM WAS CONCEPTUALIZED. THE  
DOCUMENT DEALS WITH PHASE 1: DETAILING OF  
SPECIFICATIONS AND REQUIREMENTS FOR FOUR  
PSYCHOACOUSTIC LABORATORY EXPERIMENTS PLUS THE  
ACQUISITION OF TAPE RECORDINGS OF NOISES THAT MATCH  
THE FOUR EXPERIMENTS. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 770 257 5/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

INTERACTIVE EFFECTS OF INTENSE NOISE AND  
LOW-LEVEL VIBRATION ON TRACKING PERFORMANCE  
AND RESPONSE TIME,

(U)

73 5P HARRIS, C. STANLEY ; SOMMER,  
HENRY C. ;  
REPT. NO. AMRL-TR-73-14  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN THE AEROSPACE MEDICINE,  
V44 N9 P1013-1016 1973.

DESCRIPTORS: \*PERFORMANCE(HUMAN), \*TRACKING,  
\*NOISE, \*VIBRATION, ANALYSIS OF VARIANCE,  
REACTION TIME, RESPONSE

(U)

STUDIES CONDUCTED IN THE LABORATORY ON THE COMBINED  
EFFECTS OF NOISE AND VIBRATION ON TRACKING  
PERFORMANCE HAVE YIELDED BOTH ADDITIVE AND  
SUBTRACTIVE EFFECTS. ONE REASON FOR THE DIFFERENCE  
IN RESULTS MAY BE THE DIFFERENCE IN THE INTENSITY  
LEVELS OF THE NOISE USED. THE PURPOSE OF THE  
PRESENT STUDY WAS TO DETERMINE WHETHER THE INTENSITY  
DIFFERENCES IN NOISE LEVEL CAN ACCOUNT FOR THE  
RESULTS. NOISE PRODUCED A DETRIMENTAL EFFECT ON  
TRACKING TASK PERFORMANCE AND THE EFFECT WAS ADDITIVE  
TO THE ADVERSE EFFECT PRODUCED BY VIBRATION WHEN BOTH  
NOISE AND VIBRATION WERE PRESENTED SIMULTANEOUSLY.  
THESE RESULTS, ALONG WITH THE RESULTS OF THE  
PREVIOUS EXPERIMENTS, DEMONSTRATE THAT AS NOISE LEVEL  
IS INCREASED FROM 100 TO 110 DB THE COMBINED EFFECT  
OF NOISE AND VIBRATION CHANGES FROM SUBTRACTIVE TO  
ADDITIVE. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 770 285 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

THE COMBINED EFFECTS OF VIBRATION, NOISE,  
AND EXPOSURE DURATION ON AUDITORY TEMPORARY  
THRESHOLD SHIFT.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUL 72-MAR 73,  
SEP 73 20P SOMMER, HENRY C. ;  
REPT. NO. AMRL-TR-73-34  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: \*AUDITORY PERCEPTION, \*NOISE,  
\*VIBRATION, \*THRESHOLDS(PHYSIOLOGY),  
STRESS(PHYSIOLOGY)  
IDENTIFIERS: NOISE POLLUTION

(U)

(U)

TO DETERMINE THE COMBINED EFFECTS OF NOISE AND  
VIBRATION ON AUDITORY FUNCTION, THE TEMPORARY  
THRESHOLD SHIFTS (TTS) OF TWO GROUPS OF 10 SUBJECTS  
EACH WERE MEASURED AS A FUNCTION OF INTENSITY AND  
DURATION OF EXPOSURE. COMBINED NOISE AND VIBRATION  
WAS PRESENTED TO ONE GROUP FOR 5 MINUTES AND TO THE  
OTHER FOR 20 MINUTES. BOTH GROUPS WERE EXPOSED TO  
VIBRATION IN THE Z AXIS AT FREQUENCIES OF 9 HZ  
AND 18 HZ AT INTENSITY LEVELS OF 0.475 GZ  
(PEAK) AND 0.950 GZ, RESPECTIVELY. NOISE  
LEVELS OF 90 DB AND 100 DB WERE PRESENTED  
SIMULTANEOUSLY WITH THE VIBRATION. TTS WAS  
MEASURED AT POST EXPOSURE RECOVERY TIMES OF 0.5, 2.0,  
5.0, 10.0, AND 20.0 MINUTES. ALTHOUGH THE MEAN  
DIFFERENCE WAS SMALL (0.72 DB), A SIGNIFICANTLY  
LARGER TTS WAS OBTAINED AT 9 HZ THAN 18 HZ  
VIBRATION, AND 100 DB PRODUCED A LARGER TTS THAN  
90 DB. SIGNIFICANT DIFFERENCES IN TTS WERE  
ALSO OBTAINED AS A FUNCTION OF DURATION OF EXPOSURE,  
AND AS A FUNCTION OF POST EXPOSURE RECOVERY TIME.  
(MODIFIED AUTHOR ABSTRACT)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 449 6/10 6/19  
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE  
VA

SOME CLINICAL AND PHYSIOLOGICAL STUDIES OF  
WORKERS SUBJECTED TO STABLE NOISE, (U)

DEC 73 7P DUMKINA, G. Z. ;  
REPT. NO. FSTC-HT-23-2405-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF GIGIENA TRUDA I  
PROFESSIONALNYE ZABOLEVANIYA (USSR) N12 P23-26 1966.

DESCRIPTORS: \*NOISE POLLUTION, \*INDUSTRIAL MEDICINE,  
\*MACHINERY NOISE, PATHOLOGY, NERVOUS SYSTEM,  
MACHINE TOOLS, LATHES, STRESS(PHYSIOLOGY),  
TRANSLATIONS, USSR, CARDIOVASCULAR SYSTEM,  
INDUSTRIAL MEDICINE, INDUSTRIAL HYGIENE,  
FATIGUE(PHYSIOLOGY), BLOOD PRESSURE,  
ELECTROCARDIOGRAPHY, HIGH FREQUENCY, HEARING (U)

SOME OF THE TURRET LATHE AND AUTOMATIC LATHE  
OPERATORS STUDIED, SUBJECTED TO THE INFLUENCE OF  
MIDDLE AND HIGH FREQUENCY NOISE AT 82-99 DB, SHOWED  
FUNCTIONAL CHANGES IN THE NERVOUS SYSTEM  
CHARACTERISTIC FOR THE ASTHENO-VEGETATIVE SYNDROME.  
THE DEGREE AND FREQUENCY OF THESE CHANGES INCREASED  
WITH INCREASING NOISE INTENSITY AND WORKING  
EXPERIENCE UNDER THE INFLUENCE OF NOISE. A NUMBER  
OF PERSONS, WITH NO ORGANIC CHANGES IN THE  
CARDIOVASCULAR SYSTEM, SHOWED FUNCTIONAL CHANGES OF  
HEMODYNAMICS, MANIFESTED AS CARDIAC-TYPE COMPLAINTS,  
LABILITY OF BLOOD PRESSURE AND A TENDENCY TOWARD  
CAPILLARY SPASM. IN SOME CASES, A PERSISTENT  
REDUCTION IN AUDITORY SENSITIVITY WAS NOTED IN THE  
HIGH FREQUENCY RANGE, PROGRESSIVE WITH INCREASING  
NOISE INTENSITY AND WORK EXPERIENCE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 773 451 6/19  
CIVIL AEROMEDICAL INST OKLAHOMA CITY OKLA

SONIC BOOM STARTLE EFFECTS--REPORT OF A  
FIELD STUDY,

(U)

JUL 73 20P THACKRAY, RICHARD I. ;  
RYLANDER, RAGNAR ; TOUCHSTONE, R. MARK ;  
MONITOR: FAA-AM 73-11

UNCLASSIFIED REPORT

DESCRIPTORS: \*SONIC BOOM, \*NOISE POLLUTION,  
AVIATION MEDICINE, PSYCHOPHYSIOLOGY, SOUND,  
STIMULATION, REACTION(PSYCHOLOGY),  
STRESS(PHYSIOLOGY), THRESHOLDS(PHYSIOLOGY),  
SWEDEN, FEMALES

(U)

IDENTIFIERS: \*STARTLE RESPONSE

(U)

THE STUDY REPORTS THE RESULTS OF A SONIC BOOM FIELD  
STUDY CONDUCTED IN SWEDEN DURING OCTOBER 1972.  
TEN FEMALE SUBJECTS WERE TESTED INDOORS ON EACH OF  
SIX DAYS. TWO AGE GROUPS WERE STUDIED: 20-35  
AND 50-65 YEARS. FIGHTER AIRCRAFT FLYING AT VARIOUS  
HEIGHTS OVER THE TEST SITE PRODUCED BOOMS WITH  
OUTDOOR OVERPRESSURES RANGING FROM 60-640 N/SQ.M.  
THE NUMBER OF BOOMS EXTENDED FROM 5 TO 13 PER DAY.  
SUBJECTS PERFORMED INDOORS ON AN ARM-HAND  
STEADINESS TASK. THE RESULTS INDICATED THAT  
OUTDOOR OVERPRESSURES RANGING FROM 70-120 N/SQ.M.  
(26-35 N/SQ.M. INDOORS) PRODUCED REFLEXIVE ARM-  
HAND MOVEMENTS IN ABOUT 10 PER CENT OF THE SUBJECTS.  
BOOMS OF 300 N/SQ.M. (67 N/SQ.M. INDOORS)  
AND GREATER PRODUCED RESPONSES IN ABOUT 75 PER CENT  
OF THE SUBJECTS. BETWEEN THESE EXTREMES OF  
OVERPRESSURE THERE WAS THE SUGGESTION OF A CRITICAL  
OVERPRESSURE RANGE LYING BETWEEN 150-180 N/SQ.M.  
(40-46 N/SQ.M. INDOORS) IN WHICH AN ABRUPT  
INCREASE IN STARTLE RESPONSE OCCURRED. (MODIFIED  
AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 773 690 5/10  
ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILL

PREDICTING COMMUNITY RESPONSE TO BLAST  
NOISE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 73 98P SCHOMER, PAUL D. ;  
REPT. NO. CERL-TR-E-17  
PROJ: DA-4-A-062212  
TASK: 4-A-06221205

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON SOUND AND VIBRATION  
TOLERANCE LIMITS--RESIDENTIAL AREAS.

DESCRIPTORS: \*NOISE(SOUND), \*COMMUNITY  
RELATIONS, \*BLAST, \*EXPLOSIVES, \*NOISE POLLUTION,  
ATTITUDES(PSYCHOLOGY), MATHEMATICAL PREDICTION,  
COMPUTER PROGRAMMING, OVERPRESSURE, ARTILLERY  
FIRE, GROUND LEVEL, AIRBURST, UNDERGROUND  
EXPLOSIONS

(U)

IDENTIFIERS: \*ANNOYANCE

(U)

THE REPORT PRESENTS A PRELIMINARY METHOD FOR  
PREDICTING LEVELS OF ANNOYANCE FROM ARTILLERY OR  
BLAST NOISE IN THE ENVIRONS OF A MILITARY BASE.  
THE MEANS ARE GIVEN TO RELATE VARIOUS ARTILLERY  
PIECES TO A TNT EQUIVALENT AND TO NORMALIZE THE  
OVERPRESSURE FROM DETONATING VARIOUS QUANTITIES OF  
TNT TO THE OVERPRESSURE FROM THE DETONATION OF ONE  
POUND OF TNT. BURIED CHARGES AND ABOVEGROUND  
DETONATIONS ARE ALSO CONSIDERED. VARIOUS WAYS TO  
PREDICT PROBABLE BLAST OVERPRESSURE AND FREQUENCY  
SPECTRUM AS A FUNCTION OF DISTANCE ARE DISCUSSED.  
(MODIFIED AUTHOR ABSTRACT)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 776 943 6/10 6/16  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CHANGES IN HEARING OF WORKERS UNDER A  
PROLONGED EFFECT OF NOISE WITH STANDARD  
PARAMETERS,

(U)

MAR 74 15P MAKSIMIVA, L. I. ;  
REPT. NO. FTD-HT-23-1036-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. FROM NAUCHNO-  
ISSLEDOVATELSKII INSTITUT GIGIENY, MOSCOW.  
UCHENYE ZAPISKII (USSR) P92-99 1968, BY VICTOR  
MESENZEFF.

DESCRIPTORS: \*HEARING, \*NOISE, \*EAR PROTECTORS,  
DEAFNESS, TEST METHODS, AUDIOMETRY,  
STRESS(PHYSIOLOGY), PERSONNEL, USSR,  
TRANSLATIONS, OCCUPATIONAL DISEASES, MEDICAL  
RESEARCH, AUDITORY ACUITY, PREDICTIONS

(U)

FOR PROLONGED PERIODS OF TIME UNDER INDUSTRIAL  
CONDITONS, NOISE AT 85-88 DB WHICH IS AT THE  
MAXIMUM PERMISSIBLE LEVELS AND 74-80 DB WHICH IS 5-  
10 DB BELOW THE MAXIMUM PERMISSIBLE LEVELS IN THE  
FREQUENCY RANGE OF 800 TO 4000 HZ, CAN PRESENT A  
DANGER WITH REGARD TO THE DEVELOPMENT OF OCCUPATIONAL  
HARDNESS OF HEARING WHEN THE INDIVIDUAL'S HEARING  
ORGAN IS NOT SUFFICIENTLY STABLE. IN ORDER TO  
IMPROVE THE EFFECTIVE STANDARDS, IN ADDITION TO  
PHYSIOLOGICAL STUDIES, IT IS NECESSARY TO CARRY OUT  
DYNAMIC CLINICAL OBSERVATIONS IN THE PROCESS OF  
CHRONIC NOISE EFFECT UNDER INDUSTRIAL  
CONDITIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 777 184 5/10 6/19  
NAVY MEDICAL NEUROPSYCHIATRIC RESEARCH UNIT SAN DIEGO  
CALIF

PROLONGED EXPOSURE TO NOISE AS A SLEEP  
PROBLEM,

(U)

73 19P JOHNSON, LAVERNE C. ;  
TOWNSEND, RICHARD E. ; NAITOH, PAUL ; MUZET, ALAIN  
G. ;  
REPT. NO. NMNRU-73-33  
PROJ: MF12.524  
TASK: MF12.524.004

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN PROCEEDINGS OF THE  
INTERNATIONAL CONGRESS ON NOISE AS A PUBLIC  
HEALTH PROBLEM HELD AT DUBROVNIK (YUGOSLAVIA)  
ON MAY 13-18, 1973, P559-574.

DESCRIPTORS: •NOISE, •SLEEP, PUBLIC HEALTH,  
PSYCHOPHYSIOLOGY, STRESS(PSYCHOLOGY),  
STRESS(PHYSIOLOGY), HUMANS, MONITORING,  
MILITARY MEDICINE, BEHAVIOR,  
EXPOSURE(PHYSIOLOGY), PERFORMANCE(HUMAN)

(U)

IDENTIFIERS: SLEEP STAGES

(U)

IN ONE 15-DAY AND ONE 55-DAY LABORATORY STUDY AND  
ONE OPERATIONAL 7-DAY TRAINING CRUISE, THE EFFECT OF  
24-HOUR-A-DAY EXPOSURE TO PINGS OF INTENSITIES  
RANGING FROM 80 - 90 DB SPL ON SLEEP WAS EXAMINED.  
THE PINGS WERE LESS THAN A SECOND IN DURATION WITH  
AN INTERSTIMULUS INTERVAL OF 45 OR 22 SECONDS, AND IN  
THE 3-4 KHZ FREQUENCY RANGE. MAXIMUM DURATION OF  
PING EXPOSURE WAS 30 DAYS. IN THIS YOUNG ADULT  
SAMPLE, EXPOSURE TO THE NOISE DID NOT PRODUCE A  
DECREASE IN SLEEP DURATION OR AN INCREASE IN NUMBER  
OF AWAKENINGS. THERE WERE, HOWEVER, REPORTS OF  
SLEEP ONSET DIFFICULTY AND A DECREASE IN PERCENT OF  
SLEEP STAGE FOUR DURING PING EXPOSURE. NO  
SIGNIFICANT CHANGES IN WAKING PERFORMANCE OR BEHAVIOR  
WERE FOUND AS A RESULT OF THE PING EXPOSURE DURING  
ANY OF THE THREE STUDIES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 777 520 5/10 6/17  
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

PSYCHOLOGICAL FACTORS RELATED TO THE  
VOLUNTARY USE OF HEARING PROTECTION IN  
HAZARDOUS NOISE ENVIRONMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
OCT 73 15P LUZ, GEORGE A. ; DECATUR,  
RICHARD A. ; THOMPSON, ROBERT L. ;  
REPT. NO. USAMRL-1066  
PROJ: DA-3-A-161102-B-71-R  
TASK: 3-A-61102-B-71-R-03

UNCLASSIFIED REPORT

DESCRIPTORS: \*BEHAVIOR, \*EAR PROTECTORS,  
UTILIZATION, HEARING, NOISE, PROTECTIVE  
EQUIPMENT, MOTIVATION, ATTITUDES (PSYCHOLOGY)  
IDENTIFIERS: INCENTIVES (PSYCHOLOGY)

(U)

(U)

THE OBJECTIVE OF THIS STUDY WAS TO DETERMINE  
WHETHER SOCIAL CONTEXTS HAD ANY INFLUENCE ON THE USE  
OF EAR PROTECTION IN A HAZARDOUS NOISE ENVIRONMENT  
AND ON ATTITUDES TOWARD EARPLUGS. AN ARMY  
COMMUNITY WAS SCANNED FOR SITUATIONS IN WHICH PERSONS  
COULD CHOOSE TO USE EAR PROTECTION. BEHAVIOR WAS  
MEASURED IN THREE DIFFERENT WAYS: PENCIL AND PAPER  
TESTS, OBSERVATION, AND EXPERIMENTAL MANIPULATION.  
IN THREE DIFFERENT SITUATIONS, THE USAGE OF  
EARPLUGS WAS SIGNIFICANTLY RELATED TO SOCIAL CONTEXT.  
A RECOMMENDATION FOR A MORE PRECISE DEFINITION OF  
THE POSITIVE INCENTIVES FOR EAR PROTECTION WAS MADE.  
(AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 777 581 6/19  
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C OFFICE OF  
AVIATION MEDICINE

A COMPARISON OF THE STARTLE EFFECTS  
RESULTING FROM EXPOSURE TO TWO LEVELS OF  
SIMULATED SONIC BOOMS,

(U)

DEC 73 14P THACKRAY, RICHARD I. ;  
TOUCHSTONE, ROBERT M. ; BAILEY, JOE P. ;  
REPT. NO. FAA-AM-73-16

UNCLASSIFIED REPORT

DESCRIPTORS: \*SONIC BOOM, PSYCHOMOTOR FUNCTIONS,  
STRESS(PHYSIOLOGY), RESPONSE(BIOLOGY),  
PERFORMANCE(HUMAN), HEART, EYE, GALVANIC  
SKIN RESPONSE, REFLEXES, NOISE, AUTONOMIC NERVOUS  
SYSTEM

(U)

IDENTIFIERS: \*STARTLE RESPONSES, NOISE POLLUTION,  
HEART RATE

(U)

SUBJECTS WERE EXPOSED INDOORS TO SIMULATED SONIC  
BOOMS HAVING OUTSIDE OVERPRESSURES OF 50 AND 150 N/  
SQ M. RISE TIMES WERE HELD CONSTANT AT 5.5 MSEC.  
IN ADDITION TO THE OUTSIDE MEASUREMENTS, INSIDE  
MEASURES OF DBL IN AND DBA WERE ALSO OBTAINED.  
SUBJECTS ATTEMPTED TO HOLD A HAND-STEADINESS DEVICE  
ON TARGET DURING BOOM EXPOSURE AND AMPLITUDE OF THE  
ARM-HAND STARTLE RESPONSE WAS DETERMINED.  
RECORDINGS WERE ALSO OBTAINED OF THE SKIN  
CONDUCTANCE AND HEART-RATE RESPONSES AS WELL AS THE  
EYE-BLINK REFLEX. ALTHOUGH THE 50 N/SQ M BOOM  
PRODUCED SLIGHT ARM-HAND STARTLE RESPONSES IN A SMALL  
PERCENTAGE OF SUBJECTS, THE FREQUENCY OF THESE  
RESPONSES WAS SIGNIFICANTLY GREATER TO THE HIGHER  
BOOM LEVEL. TENTATIVE CONCLUSIONS ADVANCED THAT  
SONIC BOOMS EXPERIENCED INDOORS MAY CAUSE SLIGHT ARM-  
HAND STARTLE RESPONSES WHICH COULD HAVE ADVERSE  
EFFECTS ON OCCUPATIONAL TASKS IN WHICH ARM-HAND  
STEADINESS IS THE PRINCIPAL SKILL REQUIRED, BUT THAT  
IT SEEMS UNLIKELY THESE RESPONSES WOULD SIGNIFICANTLY  
IMPAIR PERFORMANCE ON LESS SENSITIVE PSYCHOMOTOR  
TASKS. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 779 833 6/10  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

HYGIENIC CHARACTERISTICS OF NOISE AT MODERN  
THERMAL POWER STATIONS,

(U)

APR 74 12P PALTSEV, YU. P. ;  
REPT. NO. FTD-HT-23-1031-74  
PROJ: AF-7231  
TASK: 723101

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. FROM NAUCHNO-  
ISSLEDOVATELSKII INSTITUT GIGIENY, MOSCOW.  
UCHENYE ZAPISKII (USSR) P56-62 1968, BY FRANK C.  
VAUGHAN.

DESCRIPTORS: •THERMAL POWER PLANTS,  
•NOISE(SOUND), •INDUSTRIAL HYGIENE, ACOUSTIC  
MEASUREMENT, PERFORMANCE(HUMAN), DEAFNESS,  
USSR, TRANSLATIONS, PROTECTION, PERSONNEL,  
INDUSTRIAL MEDICINE

(U)

IDENTIFIERS: RECOMMENDATIONS, NOISE POLLUTION,  
NOISE REDUCTION

(U)

THE MAINTENANCE PERSONNEL OF THERMAL POWER STATIONS  
ARE EXPOSED TO THE CONSTANT EFFECT OF NOISE, WHOSE  
TOTAL LEVEL REACHES 100-111 DB, FOR THE WHOLE WORK  
DAY. THE NOISE LEVELS CAN BE LOWERED BOTH AT  
OPERATING AND PLANNED THERMAL POWER STATIONS DUE TO  
THE ELIMINATION OR SOUND PROOFING OF ITS SOURCES.  
FOR THE PROTECTION OF THE MAINTENANCE PERSONNEL OF  
THE POWER STATION FROM THE ADVERSE EFFECT OF NOISE IN  
TURBINE AND BOILER SHOPS, IT IS NECESSARY TO INSTALL  
NOISE INSULATING BOOTHS IN THE OPERATOR'S POSITIONS  
AND TO COVER THE WALLS OF THE ROOMS OF UNIT CONTROL  
PANELS WITH SOUND INSULATING PANELS. IT IS  
RECOMMENDED THAT ANTIHUM DEVICES BE USED DURING WORK  
IN SECTIONS WITH INTENSE NOISE (NEAR AIR HOLES OF  
STEAM PIPELINES).

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 780 369 6/10  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

IMPAIRMENT OF THE HEARING FUNCTION IN PISTOL  
TESTER-ASSEMBLERS,

(U)

APR 74 11P KUBLANOVA, P. S. ;  
REPT. NO. FTD-HT-23-1035-74  
PROJ: AF-7231  
TASK: 723101

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. FROM NAUCHNO-  
ISSLEDOVATELSKII INSTITUT GIGIENY, MOSCOW.  
UCHENYE ZAPISKII (USSR) P86-91 1968, BY RAY E.  
ZARZA.

DESCRIPTORS: \*PISTOLS, \*HEARING, \*NOISE,  
DEAFNESS, SMALL ARMS, TEST METHODS, INDUSTRIAL  
MEDICINE, USSR, TRANSLATIONS, PROTECTIVE  
EQUIPMENT

(U)

IDENTIFIERS: HEARING CONSERVATION

(U)

THE STATE OF THE ACOUSTIC FUNCTION IN 31 PISTOL  
TESTER-ASSEMBLERS WAS STUDIED. THEIR AGES WERE  
FROM 25 TO 45 YEARS, PERIOD OF SERVICE FROM ONE MONTH  
TO 2.5 YEARS. FOR THE WORKERS SUBJECTED TO  
PROLONGED ACTION OF INDUSTRIAL NOISE AND VIBRATIONS,  
SEVERAL TYPES OF AUDIOGRAMS WERE ENCOUNTERED THAT  
REFLECT DIFFERENT STAGES OF THE DEVELOPMENT OF  
OCCUPATIONAL DEAFNESS. THE LIMITED SUPPRESSION OF  
HEARING CAN BE REPRESENTED IN THE FORM OF A CURVE  
WITH A TROUGH AT 4000 HZ; EARLIER IMPAIRMENT  
PERSISTS OVER A RELATIVELY LONG PERIOD, AND THEN  
SLOWLY AND TO A LESS MARKED DEGREE, COVERS 3000 HZ,  
2000 HZ AND LOWER FREQUENCIES. FOR THOSE WORKERS  
WITH A CONSIDERABLE DEGREE OF HEARING IMPAIRMENT AT  
4000 HZ AND HIGHER, IT WAS OBSERVED THAT WITH A  
RELATIVELY GREATER PERIOD OF INDUSTRIAL SERVICE,  
THERE WAS RETENTION OF THE NORMAL PERCEPTION OF THE  
LOWER SOUNDS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 781 656 6/10  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

OCCUPATIONAL HEARING DISORDERS (HARDNESS OF  
HEARING) IN EXCAVATOR (POWER SHOVEL)  
OPERATORS IN QUARRIES,

(U)

JUN 74 15P KUBLANOVA, P. S. IRYABOV, N.  
A. I  
REPT. NO. FTD-HT-23-1037-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF NAUCHNO-  
ISSLEDOVATELSKII INSTITUT GIGIENY, MOSCOW. UCHENYE  
ZAPISKII (USSR) P100-107 1968, BY JOSEPH E.  
PEARSON.

DESCRIPTORS: •INDUSTRIAL MEDICINE, •NOISE,  
•VIBRATION, •HEARING, OPERATORS(PERSONNEL),  
DEAFNESS, EXCAVATION, STANDARDS, USSR,  
TRANSLATIONS

(U)

IDENTIFIERS: MINES(EXCAVATIONS)

(U)

THE REPORT GIVES A BRIEF DISCUSSION OF THE STUDY ON  
THE STATE OF THE OTORHINOLARYNGOLOGICAL ORGANS AND  
THE AUDITORY AND VESTIBULAR FUNCTIONS IN THE WORKERS  
OF THE SIBAYSKIY AND LIBEDINSKIY PITS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 781 658 6/10 6/20  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

REGARDING THE OCCUPATIONAL PATHOLOGY OF  
PERSONS SUBJECTED TO THE EFFECT OF HIGH-  
FREQUENCY NOISE IN COMBINATION WITH OTHER  
FACTORS DURING PLASMA SPRAY COATING OF  
METALS,

(U)

JUN 74 15P ILNITSKAYA, A. V. ;  
REPT. NO. FTD-HT-23-1034-74  
PROJ: AF-7231  
TASK: 723101

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF NAUCHNO-  
ISSLEDOVATELSKII INSTITUT GIGIENY, MOSCOW. UCHENYE  
ZAPISKII (USSR) P78-85 1968, BY PAUL J. REIFF.

DESCRIPTORS: \*INDUSTRIAL MEDICINE, \*NOISE, METAL  
COATINGS, TOXICITY, ENVIRONMENTS, HAZARDS,  
EXPOSURE (PHYSIOLOGY), STANDARDS, OCCUPATIONAL  
DISEASES, INDUSTRIES, USSR, TRANSLATIONS

(U)

IDENTIFIERS: RECOMMENDATIONS, \*PLASMA SPRAYING,  
METAL INDUSTRY

(U)

AMONG THE NEW TECHNOLOGICAL PROCESSES, PLASMA  
METHODS OF METAL PROCESSING SHOW GREAT PROMISE.  
THEREFORE, A MULTIFACETED INVESTIGATION OF THE  
WORKING CONDITIONS OF PERSONS INVOLVED IN THE  
SERVICING OF PLASMA APPARATUSES IS PRESENTED TO  
PREVENT POSSIBLE OCCUPATIONAL ILLNESSES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 785 740 6/10 5/10  
LOUISVILLE UNIV KY PERFORMANCE RESEARCH LAB

BEHAVIORAL EFFECTS OF PROLONGED EXPOSURE TO  
CONTINUOUS AND INTERMITTENT NOISE.

(U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT. 1 JUL 71-30  
JUN 72,

JUN 74 142P REPKO, JOHN D. ; BROWN, BILL  
R. ; LOEB, MICHEL ;  
REPT. NO. ITR-74-29  
CONTRACT: DAHC19-69-C-0009  
PROJ: DA-2-T-014501-B-81-B  
TASK: 2-T-014501-B-81-B-00

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: \*NOISE POLLUTION,  
\*STRESS (PSYCHOLOGY), \*INDUSTRIAL HYGIENE,  
PSYCHOPHYSIOLOGY, PERFORMANCE (HUMAN),  
BEHAVIOR, MILITARY PERSONNEL, ACOUSTICS,  
ENVIRONMENTS, THRESHOLDS (PHYSIOLOGY),  
PHYSIOLOGICAL EFFECTS, EXPOSURE (PHYSIOLOGY),  
PSYCHOACOUSTICS

(U)

THE PURPOSE OF THIS INVESTIGATION WAS TO ASSESS  
MAN'S PERFORMANCE IN A WORK SITUATION WHEREIN 90 DB  
CONTINUOUS AND PERIODIC 96 DB INTERMITTENT NOISE  
WERE SEPARATELY PRESENTED AS ENVIRONMENTAL OR WORK-  
SITUATION STRESSORS. THE PRESENT STUDY EMPLOYED A  
SYNTHETIC-WORK APPROACH IN WHICH SEVERAL TASKS WERE  
COMBINED INTO A MULTIPLE-TASK PERFORMANCE BATTERY  
(MTPB) CONSISTING OF SIX TASKS SELECTED TO TEST  
BOTH INDIVIDUAL- AND SMALL-GROUP (CREW)  
PERFORMANCE. THE RESULTS, SHOWED THAT THE MEAN  
PERCENTAGE OF BASELINE PERFORMANCE WAS ENHANCED BY A  
PERIODIC 96 DB INTERMITTENT NOISE. ON THE OTHER  
HAND, SINCE CONTINUOUS NOISE MAY BE CONSIDERED AS  
CONTAINING FEWER STIMULUS ELEMENTS THAN INTERMITTENT  
NOISE, IT WAS EXPECTED THAT GENERAL PERFORMANCE  
DURING CONTINUOUS NOISE WOULD BE LESS THAN DURING  
INTERMITTENT NOISE. (MODIFIED AUTHOR  
ABSTRACT)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 652 6/10 13/2  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

HAZARDOUS NOISE AND INDUSTRIAL HYGIENE  
SURVEY, 910 TAC FIGHTER GROUP (AFRES)  
YOUNGSTOWN MUNICIPAL AIRPORT VIENNA OH  
44473.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
SEP 74 42P GRAUVOGEL, LAWRENCE W. ;  
REPT. NO. EHL(K)-74-24

UNCLASSIFIED REPORT

DESCRIPTORS: •NOISE POLLUTION, •INDUSTRIAL HYGIENE,  
OCCUPATIONAL DISEASES, OHIO, VENTILATION,  
THERMAL STRESSES, ILLUMINATION, PERSONNEL,  
CHEMICALS, AIR FORCE, AIRPORTS  
IDENTIFIERS: RECOMMENDATIONS, VIENNA(OHIO),  
•HEARING CONSERVATION

(U)

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AT THE REQUEST OF HEADQUARTERS, CENTRAL AIR  
FORCE RESERVE REGION, ELLINGTON AFB TX, A  
HAZARDOUS NOISE AND INDUSTRIAL HYGIENE SURVEY WAS  
CONDUCTED 22-24 MAY 1974 FOR THE 910 TAC  
FIGHTER GROUP (AFRES), YOUNGSTOWN MA,  
VIENNA OH 44473. PERSONNEL EXPOSED TO  
POTENTIALLY HAZARDOUS NOISE AND SOURCES AND AREAS OF  
POTENTIALLY HAZARDOUS NOISE ARE IDENTIFIED BY SHOP.  
VENTILATION, THERMAL STRESS AND ILLUMINATION ARE  
DISCUSSED FOR EACH SHOP AND RECOMMENDATIONS MADE.  
COMPREHENSIVE LISTINGS BY SHOP OF CHEMICALS USED  
AND COMPOSITION ARE INCLUDED TO AID THE PHYSICIAN IN  
IDENTIFICATION OF THE POSSIBLE SOURCE OF OCCUPATIONAL  
ILLNESSES ENCOUNTERED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 907 805 1974 6/19 14/2  
ABERDEEN PROVING GROUND MD MATERIEL TESTING  
DIRECTORATE

SPECIAL STUDY OF ANTHROPOMORPHIC SIMULATORS  
FOR USE IN BLAST ENVIRONMENTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 19 APR-18 SEP 72,  
DEC 72 32P COMPTON, J. ;  
REPT. NO. APG-MT-4183  
PROJ: RDT/E-1-U-65702-D-625, USATECOM-9-CO-001-  
000-082  
TASK: 1-U-665702-D-62501

UNCLASSIFIED REPORT

DESCRIPTORS: (\*ANATOMICAL MODELS, \*EXPLOSION EFFECTS),  
(\*BLAST, STRESS(PHYSIOLOGY)), ARMORED VEHICLES, ARMY  
PERSONNEL, ANTHROPOMETRY, VULNERABILITY, AIRBURST,  
IMPACT SHOCK, AMMUNITION FRAGMENTS, PROJECTILES, LAND  
MINES, SAFETY, PHYSICAL PROPERTIES, TISSUES(BIOLOGY),  
HEAD(ANATOMY), EXTREMITIES, THORAX, ABDOMEN,  
TOLERANCES(PHYSIOLOGY), HEAT TOLERANCE, EXPLOSIONS,  
FLAMES, SIMULATION, INSTRUMENTATION, TEST METHODS,  
CASUALTIES, WOUNDS AND INJURIES, BONE FRACTURES, HUMAN  
BODY, HUMANS, SURVIVAL(PERSONNEL), DYNAMICS, MALES,  
SIMULATORS, DAMPING, ELASTIC PROPERTIES, DEFORMATION,  
RESONANCE, ACCELERATION, FORCE(MECHANICS),  
MUSCULOSKELETAL SYSTEM

(U)

IDENTIFIERS: BIOENGINEERING, OVERPRESSURE, TANK  
CREWS

(U)

THE INVESTIGATION OF EXISTING MATERIEL TESTING  
DIRECTORATE (MTD) CAPABILITIES INVOLVING THE USE  
OF ANTHROPOMORPHIC SIMULATORS TO ACQUIRE DATA  
PERTINENT TO THE DETERMINATION OF INJURIES TO THE  
CREWS OF ARMORED VEHICLES AS A RESULT OF EXPOSURE TO  
MINE-EXCITED SHOCK BLAST WAS CONDUCTED FROM 19  
APRIL THROUGH 18 SEPTEMBER 1972 AT ABERDEEN  
PROVING GROUND. THE OBJECTIVES OF THIS  
INVESTIGATION WERE TO DEFINE CUSTOMER INTERESTS, THE  
OPTIONS AVAILABLE IN ANTHROPOMORPHIC SIMULATORS, THE  
AVAILABILITY OF GUIDELINES FOR CORRELATING TEST  
RESULTS TO KNOWN HUMAN EFFECTS, AND THE APPLICABLE  
INSTRUMENTATION. THE INVESTIGATIONS WERE LIMITED TO  
THE IMPACT REGION OF HUMAN TOLERANCE LEVELS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A001 152 6/5  
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CONCEPTS OF THE TERMS SUSCEPTIBILITY AND  
RESISTANCE AS THEY RELATE TO HEARING DAMAGE  
DUE TO NOISE,

(U)

NOV 74 14P SEDLACEK, K. ;  
REPT. NO. FTD-HC-23-2783-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF CESKOSLOVENSKA  
OTOLARYNGOLOGIE, V21 N1 P4-9 1972.

DESCRIPTORS: \*NOISE POLLUTION, \*HEARING, DAMAGE,  
LOSSES, RESISTANCE(BIOLOGY), INDUSTRIAL  
MEDICINE, TRANSLATIONS, CZECHOSLOVAKIA, HUMANS  
IDENTIFIERS: AUDITORY DEFECTS

(U)

(U)

THE AUTHOR'S DEFINITION OF SUSCEPTIBILITY AND  
RESISTANCE IS FORMULATED ON THE BASIS OF CORRELATION  
BETWEEN THE INJURING FACTOR (NOXA) AND ITS EFFECT  
BY MEANS OF THE PROBABILITY THAT IS EXPRESSED AS THE  
DIFFERENCE BETWEEN THE EXPECTED VALUE GIVEN BY THE  
REGRESSION LINE AND REAL VALUE OF THE HEARING LOSS.  
THIS DEFINES SUSCEPTIBILITY AND, SIMILARLY,  
RESISTANCE AS THE PROBABILITY OF A GIVEN LOSS WITH  
THE PRESUMPTION OF THE AVERAGE REACTIVITY OF THE  
GIVEN PERSON. EXAMPLES OF APPLICATION OF SUCH AN  
EVALUATION OF RECEPTIVITY ARE SHOWN.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A002 266 5/10 20/1  
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C OFFICE OF  
AVIATION MEDICINE

BEHAVIORAL, AUTOMATIC, AND SUBJECTIVE  
REACTIONS TO LOW- AND MODERATE-LEVEL  
SIMULATED SONIC BOOMS: A REPORT OF TWO  
EXPERIMENTS AND A GENERAL EVALUATION OF SONIC  
BOOM STARTLE EFFECTS, (U)

SEP 74 16P THACKRAY, RICHARD I. ;  
TOUCHSTONE, R. MARK ; BAILEY, JOE P. ;  
REPT. NO. FAA-AM-74-9  
PROJ: FAA-AM-E-74-PSY-47, FAA-AM-E-75-PSY-47

UNCLASSIFIED REPORT

DESCRIPTORS: \*SONIC BOOM, \*STRESS (PSYCHOLOGY),  
\*PSYCHOLOGICAL TESTS, SIMULATION, INTENSITY,  
RESPONSE, NOISE POLLUTION, EYE (U)  
IDENTIFIERS: \*STARTLE EFFECTS, ANNOYANCE,  
EYEBLINK (U)

TWO SEPARATE STUDIES ARE REPORTED. THE FIRST  
ATTEMPTED TO DETERMINE A SONIC BOOM EXPOSURE LEVEL  
BELOW WHICH STARTLE REACTIONS WOULD NOT OCCUR.  
SUBJECTS WERE EXPOSED INDOORS TO SIX SIMULATED  
SONIC BOOMS HAVING VARIOUS OUTSIDE OVERPRESSURES.  
IN THE SECOND STUDY, SUBJECTS WERE EXPOSED INDOORS  
TO A SERIES OF 12 SIMULATED BOOMS IN ORDER TO ASSESS  
HABITUAL EFFECTS. AUTOMATIC AND EYEBLINK  
RESPONSES, AS WELL AS RATINGS OF SUBJECTIVE  
ANNOYANCE, WERE OBTAINED IN BOTH STUDIES. THE FINAL  
SECTION OF THE REPORT SUMMARIZES THE EXPECTED  
BEHAVIORAL, AUTONOMIC, AND SUBJECTIVE EFFECTS OF  
EXPOSURE TO VARIOUS LEVELS OF SONIC BOOMS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A003 570 6/16 20/1  
HUMAN ENGINEERING LAB ABERDEEN PROVING GROUND MD

UPPER LIMIT TO STAPES DISPLACEMENT:  
IMPLICATIONS FOR HEARING LOSS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 74 6P PRICE, G. RICHARD ;  
REPT. NO. HEL-TM-28-74

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL ACOUSTICAL SOCIETY  
OF AMERICA, V56 N1 P195-197 JUL 74.

DESCRIPTORS: \*EAR, \*DEAFNESS, \*NOISE(SOUND),  
HEARING, HIGH FREQUENCY, EXPOSURE(PHYSIOLOGY),  
NOISE POLLUTION, HUMAN FACTORS ENGINEERING,  
INDUSTRIAL MEDICINE, IMPULSE NOISE, REPRINTS  
IDENTIFIERS: \*MIDDLE EAR, HEARING LOSS,  
STAPES

(U)

(U)

BASED ON CALCULATIONS FROM EXISTING DATA, THE HUMAN  
MIDDLE EAR APPEARS TO HAVE A DISPLACEMENT LIMIT OF  
ABOUT 30 MICROMETERS PEAK TO PEAK AND BECOMES  
NONLINEAR AT ABOUT 10 MICROMETERS PEAK TO PEAK.  
THIS NONLINEARITY BEGINS AT FREE-FIELD SPLS OF  
110 TO 120 DB IN THE MIDRANGE OF FREQUENCIES. THE  
PRESENCE OF AN ABSOLUTE LIMIT TO STAPES DISPLACEMENTS  
INDICATES THAT AT HIGH SPLS THERE IS A HIGH-  
FREQUENCY BIAS IN THE CONDUCTING MECHANISM WHICH MAY  
IN PART BE RESPONSIBLE FOR THE HIGH-FREQUENCY HEARING  
LOSS COMMONLY SEEN FOLLOWING INDUSTRIAL AND/OR  
IMPULSIVE NOISE EXPOSURE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A003 638 6/10 6/20  
ENVIRONMENTAL HEALTH LAB KELLY AFB TEX

INDUSTRIAL HYGIENE SURVEY, 110TH TACTICAL  
SUPPORT GROUP, MI ANG BATTLE CREEK, MI  
49016.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,  
DEC 74 44P GRAUVOGEL, LAWRENCE W. ;  
REPT. NO. EHL(K)-74-28  
PROJ: EHL-K-74-11

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE POLLUTION, \*INDUSTRIAL HYGIENE,  
TOXICOLOGY, VENTILATION, INSPECTION, STANDARDS,  
OCCUPATIONAL DISEASES, CHEMICALS, EAR  
PROTECTORS

(U)

IDENTIFIERS: INDUSTRIAL ATMOSPHERES,  
RECOMMENDATIONS, TOXIC HAZARDS

(U)

AT THE REQUEST OF THE 110TH TACTICAL SUPPORT  
GROUP, MI ANG, BATTLE CREEK MI 49016 AND AS  
DIRECTED BY AFLC/SGB A HAZARDOUS NOISE AND  
INDUSTRIAL HYGIENE SURVEY WAS CONDUCTED 9-12  
SEPTEMBER 1974. PERSONNEL EXPOSED TO POTENTIALLY  
HAZARDOUS NOISE AND SOURCES AND AREAS OF POTENTIALLY  
HAZARDOUS NOISE ARE IDENTIFIED BY SHOP.  
VENTILATION IS DISCUSSED FOR THE SHOPS.  
COMPREHENSIVE LISTINGS BY SHOP OF CHEMICALS USED  
AND COMPOSITIONS ARE INCLUDED TO AND THE PHYSICIAN IN  
IDENTIFICATION OF THE POSSIBLE SOURCE OF OCCUPATIONAL  
ILLNESSES ENCOUNTERED. RECOMMENDATIONS FOR USE OF  
EAR PROTECTION AND OTHER PROTECTIVE EQUIPMENT AND  
ALTERATIONS IN VENTILATION SYSTEMS, ESPECIALLY FOR  
THE VEHICLE SPRAY PAINTING FACILITY, ARE SUMMARIZED  
BY SHOP. THE UNIT OPERATES 0-2 AIRCRAFT.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A003 953 5/10  
COMPUTER IMAGE CORP DENVER COLO

THE EFFECTS OF OBSERVER CONTROL OVER VISUAL  
INFORMATION IN CLASSIFICATION PERFORMANCE. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,  
NOV 74 89P CICCHINELLI, LOUIS ; HALPERN,  
JOSEPH ;  
CONTRACT: N00014-74-C-0117

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH DENVER  
UNIV., COLO.

DESCRIPTORS: \*INFORMATION PROCESSING,  
\*PERFORMANCE(HUMAN), \*VISUAL ACUITY, DISPLAY  
SYSTEMS, DYNAMICS, OBSERVATION, CONTROL, TEST  
METHODS, STIMULI, NAVAL RESEARCH, INTERFERENCE,  
ACOUSTIC FIELDS, SHIP NOISE, SEA STATES (U)  
IDENTIFIERS: OBSERVER CONTROL, TASK PERFORMANCE,  
SEA NOISE (U)

A SERIES OF EXPERIMENTS IS REPORTED WHICH  
INVESTIGATED THE EFFECTS ON PERFORMANCE OF OBSERVER  
CONTROL OVER CERTAIN INFORMATION PARAMETERS OF A  
DYNAMIC VISUAL DISPLAY. THE RESULTS SHOWED THAT  
CLASSIFICATION PERFORMANCE WAS ENHANCED WHEN  
EXPERIENCED OBSERVERS COULD ELIMINATE AND ATTENUATE  
INFORMATION. WHEN NAIVE OBSERVERS WERE PRESENTED  
WITH THIS ATTENUATED INFORMATION SET, THEIR  
PERFORMANCE WAS SUPERIOR TO THAT OF A COMPARABLE  
GROUP SHOWN THE ENTIRE INFORMATION SET. THESE  
RESULTS WERE CONSISTENT ACROSS TWO DIFFERENT, BUT  
RELATED, SETS OF STIMULI: AMBIENT SEA NOISES AND SHIP  
SOUNDS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 818 20/1 13/2  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

COMMUNITY NOISE EXPOSURE RESULTING FROM  
AIRCRAFT OPERATIONS: APPLICATION GUIDE FOR  
PREDICTIVE PROCEDURE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 74 111P BISHOP, DWIGHT E. ;  
REPT. NO. 8BN-2582  
CONTRACT: F33615-73-C-4160  
MONITOR: AMRL TR-73-105

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRCRAFT NOISE, \*URBAN AREAS, \*URBAN  
PLANNING, \*NOISE POLLUTION, AIRPORTS, LAND USE,  
AIRCRAFT ENGINE NOISE, FLIGHT PATHS, NOISE  
REDUCTION  
IDENTIFIERS: \*NOISE EXPOSURE, \*NOISE EXPOSURE  
FORECASTS

(U)

(U)

THIS REPORT IS ONE OF A SERIES DESCRIBING THE  
RESEARCH PROGRAM UNDERTAKEN BY THE AEROSPACE  
MEDICAL RESEARCH LABORATORY TO DEVELOP  
PROCEDURES FOR PREDICTING THE COMMUNITY NOISE  
EXPOSURE RESULTING FROM AIRCRAFT OPERATIONS. IT  
DISCUSSES THE APPLICATIONS OF THE PROCEDURE TO THE  
AIRCRAFT NOISE-RELATED PROBLEMS FACING MASTER  
PLANNERS, CIVIL ENGINEERS, ENVIRONMENTALISTS, ETC.,  
AS WELL AS THE MANAGEMENT PEOPLE CONCERNED WITH  
OPERATING AN AIR BASE. EXAMPLES ARE GIVEN OF USE OF  
THE PROCEDURE IN TERMS FOR LAND PLANNING, OPERATIONAL  
APPLICATIONS AT AIR BASES AND BASIC AIRCRAFT DESIGN. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 822 20/1 13/2  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

COMMUNITY NOISE EXPOSURE RESULTING FROM  
AIRCRAFT OPERATIONS: TECHNICAL REVIEW.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
NOV 74 235P GALLOWAY, WILLIAM J. ;  
REPT. NO. BBN-2581  
CONTRACT: F33615-73-C-4160  
PROJ: AF-7231  
TASK: 723105  
MONITOR: AMRL TR-73-106

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRCRAFT NOISE, \*URBAN AREAS, \*URBAN  
PLANNING, \*NOISE POLLUTION, AIRPORTS, LAND USE,  
DIURNAL VARIATIONS, AIRCRAFT ENGINE NOISE,  
PHYSIOLOGICAL EFFECTS, REACTION(PSYCHOLOGY),  
FLIGHT PATHS

(U)

THIS REPORT IS ONE OF A SERIES DESCRIBING THE  
RESEARCH PROGRAM UNDERTAKEN BY THE AEROSPACE  
MEDICAL RESEARCH LABORATORY TO DEVELOP  
PROCEDURES FOR PREDICTING THE COMMUNITY NOISE  
EXPOSURE RESULTING FROM AIRCRAFT OPERATIONS. IT  
REVIEWS CURRENT METHODS FOR PREDICTING NOISE EXPOSURE  
AROUND AN AIRPORT, THE RESULTS OF VARIOUS SOCIAL  
SURVEYS AROUND AIRPORTS, AND PSYCHOACOUSTIC STUDIES  
OF AIRCRAFT NOISE SIGNALS, AS WELL AS EFFECTS OF  
AIRCRAFT PERFORMANCE, FLIGHT PATH DISPERSION, NON-  
STANDARD WEATHER EFFECTS, AND OTHER FACTORS AFFECTING  
THE ACCURACY AND VARIABILITY IN PREDICTING AIRCRAFT  
NOISE EXPOSURE ON THE GROUND. THESE REVIEWS AND  
ANALYSES ARE USED TO RECOMMEND A REVISED PROCEDURE  
FOR PREDICTING NOISE AROUND AIR BASES.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A005 026 5/10  
HUMAN ENGINEERING LAB ABERDEEN PROVING GROUND MD

HUMAN PERFORMANCE CRITERIA FOR MILITARY  
NOISE EXPOSURE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 75 25P HODGE, DAVID C. ; MAZURCZAK,  
JOSEPH ;  
REPT. NO. HEL-TN-2-75

UNCLASSIFIED REPORT

DESCRIPTORS: \*AUDITORY ACUITY,  
\*PERFORMANCE(HUMAN), \*NOISE, MILITARY  
RESEARCH, EXPOSURE(PHYSIOLOGY), HEARING,  
LOSSES, SPEECH  
IDENTIFIERS: TEMPORARY THRESHOLD SHIFTS

(U)

(U)

A NEW RESEARCH PROGRAM IS DESCRIBED WHOSE OBJECTIVES INCLUDE: IDENTIFICATION OF AURAL PERFORMANCE REQUIREMENTS OF SOLDIERS IN TACTICAL SITUATIONS; QUANTIFICATION OF THE EFFECTS OF AURAL ACUITY DEFICITS ON SUCH PERFORMANCE; AND DEVELOPMENT OF MODELS TO PREDICT THE EFFECTS OF MILITARY NOISE EXPOSURE ON SOLDIERS' PERFORMANCE. IT IS SHOWN THAT SOLDIERS NEED TO BE ABLE TO HEAR IN THE 100 HZ TO 12 KHZ RANGE. HEARING LOSSES ARE USUALLY FIRST OBSERVED AT 4-6 KHZ. SPEECH RECEPTION IS RELATIVELY UNAFFECTED BY TYPICAL HEARING LOSS PATTERNS, AND CAN BE PREDICTED FAIRLY WELL FROM AUDIOMETRIC DATA. MATERIEL SOUND DETECTION IS UNAFFECTED BY TYPICAL HEARING LOSSES. PERSONNEL SOUND DETECTION IS PROBABLY AFFECTED BY TYPICAL HEARING LOSSES, AND CANNOT BE PREDICTED FROM AUDIOMETRIC DATA. THE PROGRAM'S CURRENT EMPHASIS IS ON THE RELATION BETWEEN HEARING ACUITY AND HIGH-FREQUENCY PERSONNEL SOUND DETECTION. A DESCRIPTION OF THE TEST ENVIRONMENT IS INCLUDED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A005 274 5/5  
SOUTHWEST RESEARCH INST SAN ANTONIO TEX

PREDICTION OF STANDOFF DISTANCES TO PREVENT  
LOSS OF HEARING FROM MUZZLE BLAST.

(U)

DESCRIPTIVE NOTE: FINAL REPT. MAY-DEC 74,  
FEB 75 83P WESTINE, PETER S.; HOKANSON,  
JAMES C. ;

REPT. NO. R-CR-75-003  
CONTRACT: DAAA09-74-C-2064  
PROJ: DA-1-W-562603-A-004, SWRI-02-3987  
MONITOR: RIA-R CR-75-003

UNCLASSIFIED REPORT

DESCRIPTORS: \*BLAST, \*HEARING, \*SOUND PRESSURE,  
GUN BARRELS, MATHEMATICAL MODELS, LOSSES,  
TABLES(DATA), RANGE(DISTANCE), STANDOFF,  
IMPULSE NOISE, TOLERANCES(PHYSIOLOGY),  
HAZARDS

(U)

IDENTIFIERS: RECOMMENDATIONS, HEARING  
CONSERVATION

(U)

THE RECENTLY ISSUED MIL-STD-1474(MI)  
SPECIFIES WHAT MAXIMUM SIDE-ON SOUND PRESSURE LEVELS  
ARE TOLERABLE FOR DIFFERENT DURATIONS OF INCIDENT  
WAVES IF PERSONNEL AROUND HAZARDOUS NOISE SOURCES ARE  
TO BE PROTECTED FROM HEARING LOSS. IN THE CASE OF  
GUN CREW HEARING LOSS FROM MUZZLE BLAST, THE CODE  
EITHER PRESUMES THAT BLAST PRESSURES AND DURATIONS  
ARE KNOWN, EXPECTS BLAST PRESSURES AND DURATION TO BE  
CALCULATED, AND/OR DEMANDS THAT BLAST PRESSURES AND  
DURATIONS BE MEASURED AROUND ALL GUNS. IN RESPONSE  
TO MIL-STD-1474, THIS REPORT PRESENTS EMPIRICALLY  
DERIVED EQUATIONS FOR ESTIMATING PRESSURE, DURATION,  
AND TIME OF ARRIVAL FOR REFLECTED SHOCKS RELATIVE TO  
INCIDENT SHOCKS IN THE BLAST FIELD AROUND THE MUZZLE  
OF GUNS.

(U)

AD-A041 600

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA  
ENVIRONMENTAL POLLUTION. NOISE POLLUTION-NOISE EFFECTS ON HUMAN--ETC(U)  
JUN 77

F/6 6/19

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DDC/BIB-77-07

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A006 395 5/10 6/16  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

THE EFFECT OF QUIET ON HEARING.

(U)

JAN 75 22P NIXON, CHARLES W. ;  
STEPHENSON, MARK R. ;  
REPT. NO. AMRL-TR-74-99  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: •HEARING, •QUIET, •NOISE,  
•PSYCHOACOUSTICS, SENSITIVITY,  
THRESHOLDS(PHYSIOLOGY), PSYCHOPHYSIOLOGY  
IDENTIFIERS: TEMPORARY THRESHOLD SHIFTS

(U)

(U)

THE HEARING OF SUBJECTS PARTICIPATING IN  
PSYCHOACOUSTIC EXPERIMENTS MAY BE ELEVATED  
(TEMPORARY HEARING LOSS) DUE TO ENVIRONMENTAL  
NOISES ENCOUNTERED PRIOR TO THEIR ARRIVAL AT THE TEST  
SITE. HEARING THRESHOLD LEVELS OF TRAINED SUBJECTS  
WERE MEASURED IMMEDIATELY UPON ARRIVAL AT THE  
LABORATORY AND AGAIN FOLLOWING INDIVIDUAL 1/2, 1,  
AND 2 HOUR PERIODS IN THE QUIET OF AN ANECHOIC  
CHAMBER. COMPARISONS OF PREQUIET AND POSTQUIET  
THRESHOLDS REVEALED A SLIGHT TREND OF 1 OR 2 DECIBLES  
TOWARD IMPROVED HEARING AFTER QUIET. HOWEVER, THE  
CHANGES IN HEARING THRESHOLDS WERE NOT STATISTICALLY  
SIGNIFICANT AND WERE JUDGED TO BE TOO SMALL TO BE OF  
PRACTICAL SIGNIFICANCE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A007 193 6/10  
ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GROUND  
MD

EVALUATIONS FOR DETERMINATION OF COMPARATIVE  
NOISE LEVELS PRODUCED BY SELECTED ULTRA-  
LOW VOLUME INSECTICIDE DISPERSAL  
MACHINES.

(U)

NOV 74 11P  
REPT. NO. USAEHA-99-039-75

UNCLASSIFIED REPORT

DESCRIPTORS: •NOISE, •MACHINERY NOISE, •INDUSTRIAL  
HYGIENE, •SPRAYERS, DISPERSING, INSECTICIDES,  
HAZARDS, HEARING

(U)

NOISE MEASUREMENTS WERE MADE ON SEVEN ULTRA-LOW  
VOLUME (ULV) INSECTICIDE DISPERSAL MACHINES IN  
ORDER TO IDENTIFY NOISE HAZARDOUS CONDITIONS. WITH  
THE EXCEPTION OF THE NORTHEASTERN ASSOCIATES  
CARDINAL ULV SPRAYER ALL OF THE MACHINES WERE  
GASOLINE-DRIVEN AND THE PREDOMINANT SOURCE OF NOISE  
FROM THEM WAS IDENTIFIED AS THE ENGINE EXHAUSTS.  
ALL OF THE GASOLINE-DRIVEN ULV MACHINES, BY US  
ARMY STANDARDS, CONSTITUTED A HEARING HAZARD TO  
PERSONNEL IN CLOSE PROXIMITY SUCH AS THE JEEP DRIVER  
OR OPERATOR AND MAINTENANCE PERSONNEL. MAINTENANCE  
AND OPERATING PERSONNEL IN CLOSE PROXIMITY TO THE  
GASOLINE-DRIVEN ULV MACHINES MUST WEAR HEARING  
PROTECTIVE DEVICES.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A007 842 6/16  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

HUMAN TEMPORARY THRESHOLD SHIFT AND  
RECOVERY FROM 24 HOUR ACOUSTIC EXPOSURES, (U)

JAN 75 24P NIXON, CHARLES W. ; KRANTZ,  
DAVID W. ; JOHNSON, DANIEL L. ;  
REPT. NO. AMRL-TR-74-101  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE, \*HEARING, \*THRESHOLD EFFECTS,  
DEAFNESS, EXPOSURE(PHYSIOLOGY), HUMANS,  
AUDIOMETRY, NOISE POLLUTION, FREQUENCY,  
BIOACOUSTICS (U)  
IDENTIFIERS: TEMPORARY THRESHOLD SHIFTS, \*NOISE  
EXPOSURE (U)

THE EFFECTS ON HEARING SENSITIVITY OF 24 HOUR  
MONOTIC EXPOSURES TO A NARROW BAND NOISE WITH THE  
CENTER FREQUENCY AT 1000 HZ AT SOUND INTENSITIES OF  
80, 85, AND 90 DB(A) WERE EVALUATED. AUTOMATIC  
AUDIOMETRY WAS USED TO ASSESS CHANGES IN HEARING FROM  
BASELINE LEVELS FOR SIX TEST FREQUENCIES DURING  
EXPOSURE AND DURING SUBSEQUENT RECOVERY. AMONG THE  
RESULTS (1) TTS (TEMPORARY THRESHOLD  
SHIFT) GROWTH AND RECOVERY WAS PRESENT FOR 1000,  
1500, AND 2000 HZ TEST FREQUENCIES ONLY, (2)  
TTS REACHED A MAXIMUM OR ASYMPTOTE BETWEEN 8 AND 16  
HOURS EXPOSURE, (3) TTS INDUCED BY THE 85 AND  
90 DB(A) EXPOSURE LEVELS EXCEEDED THE LIMITS  
SPECIFIED BY CHABA (COMMITTEE ON HEARING,  
BIOACOUSTICS AND BIOMECHANICS) DAMAGE RISK  
CRITERIA AND (4) LONG DURATION EXPOSURES OF 85  
AND 90 DB(A) REQUIRE AT LEAST 24 HOURS OF REST  
PRIOR TO SUBSEQUENT EXPOSURE. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A009 663 20/1 5/10 1/3 6/19  
H H AEROSPACE DESIGN CO ELMSFORD N Y

SURVEY OF SONIC BOOM PHENOMENA FOR THE NON-SPECIALIST.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 74-FEB 75,  
FEB 75 106P SLUTSKY, SIMON ;  
REPT. NO. HHA-14  
CONTRACT: DOT-FA74WAI-468  
MONITOR: FAA-RD 75-68

UNCLASSIFIED REPORT

DESCRIPTORS: \*STRESS(PHYSIOLOGY), \*SONIC BOOM,  
\*ENVIRONMENTS, ANIMALS, SUPERSONIC AIRCRAFT,  
ACOUSTIC WAVES, WAVE PROPAGATION, PHYSIOLOGICAL  
EFFECTS, RESPONSE(BIOLOGY), STRUCTURAL  
RESPONSE

(U)

IDENTIFIERS: DOT/4DZ/DA, DOT/5B

(U)

THE PURPOSE OF THIS DOCUMENT IS TO MAKE AVAILABLE TO THE NON-SPECIALIST AND NON-SCIENTIST A REVIEW OF THE TECHNICAL CONCEPTS UNDERLYING THE WORK DONE IN THE FIELD OF SONIC BOOM RESEARCH. IT CONTAINS A NON-TECHNICAL DISCUSSION OF THE ACOUSTIC MECHANISMS WHICH ARE FUNDAMENTAL IN SONIC BOOM PHENOMENA, USING PHOTOGRAPHS OF WATER WAVE ANALOGUES. THEN THE REPORT DISCUSSES A VARIETY OF BASIC ASPECTS INCLUDING: GENERATION, PROPAGATION, MINIMIZATION, HUMAN RESPONSE AND SOCIAL CRITERIA, STRUCTURAL AND WILDLIFE RESPONSE, THRESHOLD MACH NUMBER OPERATIONS AND SIMULATION METHODS. THE REPORT SITES MANY REFERENCES AND DRAWS EXTENSIVELY ON A RECENT REVIEW FOR INVESTIGATORS IN THE FIELD OF SONIC BOOM PREPARED BY L. J. RUNYAN AND E. J. KANE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A010 589 6/10  
ENVIRONMENTAL HEALTH LAB MCCLELLAN AFB CALIF

MAY AIR NATIONAL GUARD INDUSTRIAL HYGIENE  
SURVEY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
JAN 75 45P DIAMOND, PHILIP ; LUBINSKY,  
WILLIAM B. I  
REPT. NO. EHL-M-75M-1  
PROJ: EHL-M-HFF-459

UNCLASSIFIED REPORT

DESCRIPTORS: \*INDUSTRIAL HYGIENE, \*NOISE POLLUTION,  
\*TRICHLOROETHYLENE, THRESHOLDS(PHYSIOLOGY),  
SOLVENTS, JOBS, EXPOSURE(PHYSIOLOGY),  
ENVIRONMENTS, HAZARDS, ULTRASONICS, PROTECTIVE  
EQUIPMENT

(U)

IDENTIFIERS: RECOMMENDATIONS, EVALUATION,  
DEGREASING

(U)

THE REPORT PRESENTS THE RESULTS OF INDUSTRIAL  
HYGIENE EVALUATIONS CONDUCTED AT THE MAY AIR  
NATIONAL GUARD INSTALLATION. THE GREATEST  
POTENTIAL HEALTH HAZARD WAS ULTRASONIC DEGREASING IN  
THE PNEUDRAULICS SHOP. RECOMMENDATIONS AND  
FINDINGS ARE PRESENTED FOR CORRECTING DEFICIENCIES IN  
THIS AREA AND OTHER SHOPS INVESTIGATED.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A010 629 20/1 13/2 13/13  
ARMY CONSTRUCTION ENGINEERING RESEARCH LAB CHAMPAIGN  
ILL

CONSTRUCTION NOISE: SPECIFICATION,  
CONTROL, MEASUREMENT, AND MITIGATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
APR 75 81P SCHOMER, P. D. ; HOMANS, B. ;  
REPT. NO. CERL-TR-E-53  
PROJ: DA-4-A-162121-A-896  
TASK: 4-A-162121-A-89606

UNCLASSIFIED REPORT

DESCRIPTORS: \*CONSTRUCTION, \*NOISE POLLUTION,  
CONSTRUCTION EQUIPMENT, NOISE REDUCTION, ACOUSTIC  
MEASUREMENT, PHYSIOLOGICAL EFFECTS, SPECIFICATIONS,  
MILITARY REQUIREMENTS

(U)

IDENTIFIERS: \*NOISE LEVELS, \*NOISE ABATEMENT,  
ARMY CORPS OF ENGINEERS

(U)

IN RECENT YEARS, NOISE FROM CONSTRUCTION SITES HAS  
BEEN AN INCREASING PROBLEM FOR THE CORPS OF  
ENGINEERS. THIS REPORT INTRODUCES NOISE AS A  
PROBLEM, HOW IT AFFECTS MAN, AND ARMY REQUIREMENTS  
FOR THE PREVENTION OF EXCESSIVE NOISE. WITH THIS  
BACKGROUND, SAMPLE SPECIFICATIONS ARE PREPARED TO  
CONTROL CONSTRUCTION-SITE NOISE AND THE MEANS  
ESTABLISHED TO MONITOR COMPLIANCE. FINALLY,  
INFORMATION IS GIVEN ON STATE AND LOCAL NOISE  
REGULATIONS AND ON NOISE-MITIGATION TECHNIQUES.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A012 090 20/1 1/3  
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

AIRCRAFT NOISE GENERATION, EMISSION AND  
REDUCTION.

(U)

DESCRIPTIVE NOTE: LECTURE SERIES.

JUN 75 187P

REPT. NO. AGARD-LS-77

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED IN BELGIUM 16-17 JUN 75,  
WEST GERMANY 19-20 JUN 75, AND IN THE UNITED  
KINGDOM 23-24 JUN 75. NATO FURNISHED.

DESCRIPTORS: \*JET AIRCRAFT, \*AIRCRAFT NOISE, JET  
ENGINE NOISE, PROPELLER NOISE, SONIC BOOM, NOISE  
REDUCTION, PHYSIOLOGICAL EFFECTS, LEGISLATION,  
NATO

(U)

IDENTIFIERS: \*NOISE SOURCES, \*NOISE ABATEMENT

(U)

THE PHYSICAL PROPERTIES OF AIRCRAFT NOISE ARE  
SUMMARIZED, WITH SPECIAL EMPHASIS ON JET NOISE AND  
FAN-COMPRESSOR-PROPELLER-ROTOR NOISE. TOPICS  
INCLUDE ACOUSTIC FUNDAMENTALS, NOISE SOURCE  
CHARACTERISTICS AND INTERACTIONS, ATMOSPHERIC  
PROPAGATION, AIRFRAME NOISE, SONIC BOOM, DUCT LINER  
AND MUFFLER THEORY. DURING THE SERIES, RESEARCH  
AND TECHNOLOGY ACTIVITIES RELATED TO JET ENGINE NOISE  
AND ITS CONTROL ARE DISCUSSED, AND THE IMPACT OF THIS  
NOISE ON PEOPLE AND COMMUNITIES AND AIRCRAFT  
OPERATIONAL PROCEDURES FOR NOISE MINIMISATION ARE  
ALSO REVIEWED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A012 724 6/16 6/5  
ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GROUND  
MD

HEARING CONSERVATION IN THE U.S. ARMY, (U)

74 4P BEARCE, GERALD R. ; CHOOK,  
EDWARD K. ;

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN PUBLIC HEALTH REPORTS,  
V85 N10 P896-900 OCT 70.

DESCRIPTORS: HEARING, \*EAR PROTECTORS, MILITARY  
MEDICINE, AUDIOMETRY, PREVENTIVE MEDICINE,  
DEAFNESS, ARMY PERSONNEL, CONSERVATION, NOISE  
REDUCTION, NOISE POLLUTION, ARMY OPERATIONS,  
REPRINTS (U)

THE HEARING CONSERVATION PROGRAM IN THE  
ARMY IS DIVIDED INTO FIVE ELEMENTS: (1)  
IDENTIFICATION OF NOISE HAZARDS BY MEASURING SOUND  
LEVELS IN POTENTIALLY NOISE-HAZARDOUS AREAS; (2)  
MEDICAL SURVEILLANCE INCLUDING PREPLACEMENT AND  
PERIODIC AUDIOMETRIC EVALUATION OF WORKERS EXPOSED TO  
POTENTIAL NOISE HAZARDS; (3) HEARING PROTECTION  
OF PERSONS EXPOSED TO HAZARDOUS NOISE BY FITTING THEM  
WITH PERSONAL PROTECTIVE DEVICES, WHICH IF PROPERLY  
FITTED, CAN PROVIDE ADEQUATE PROTECTION TO THE  
INDIVIDUAL USER; (4) HEALTH EDUCATION; AND  
(5) ENGINEERING DESIGN TO REDUCE OR ELIMINATE  
NOISE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A013 101 6/19 5/9  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

CREW STRESS AND FATIGUE IN PROLONGED  
HELICOPTER MISSIONS. THE CRESTED ROOSTER  
PROGRAM.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JAN-JUN 74,  
JUN 75 28P BOLLINGER, RALPH R. ; CRIGLER,  
JOSEPH C. ; HARTMAN, BRYCE O. ;  
REPT. NO. SAM-TR-75-15  
PROJ: AF-7930  
TASK: 793009

UNCLASSIFIED REPORT

DESCRIPTORS: \*STRESS(PHYSIOLOGY),  
\*STRESS(PSYCHOLOGY), \*FATIGUE(PHYSIOLOGY),  
\*FLIGHT CREWS, HELICOPTERS, HUMAN FACTORS  
ENGINEERING, SLEEP, METABOLISM, VIBRATION,  
AIRCRAFT NOISE, ENDURANCE(PHYSIOLOGY), TIME  
DEPENDENCE, JOB ANALYSIS, PERFORMANCE(HUMAN),  
TOLERANCES(PHYSIOLOGY), FOOD DISPENSING  
IDENTIFIERS: H-53 AIRCRAFT, HH-53 AIRCRAFT,  
WORKLOAD MANAGEMENT, COMFORT, HEART RATE,  
CRESTED ROOSTER PROJECT

(U)

(U)

AIRCREW STRESS AND FATIGUE ARE BEING EVALUATED  
THROUGHOUT PROLONGED HELICOPTER (HH-53C) FLIGHTS,  
AS PART OF JOINT RESEARCH BY THE SCHOOL OF  
AEROSPACE MEDICINE AND THE AF SATELLITE  
CONTROL FACILITY (SAMSO, LOS ANGELES,  
CALIF.). DATA CONCERN SUCH FACTORS AS:  
CREW COMFORT MODIFICATIONS; FATIGUE AND SLEEP;  
FEEDING SYSTEMS; WORKLOAD; HEART RATE;  
ENDOCRINE-METABOLIC INDICES OF STRESS; AND  
EFFECTS OF A HIGH NOISE/VIBRATION ENVIRONMENT.  
INFORMATION IN THIS REPORT IS BASED ON DATA FROM  
SINGLE LONG RECOVERY MISSIONS. TOLERANCE TO  
FREQUENT LONG FLIGHTS IS NOT YET KNOWN, AND WILL  
REQUIRE FURTHER STUDY.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A013 435 20/1 1/5  
MITRE CORP MCLEAN VA

AIRCRAFT SOUND DESCRIPTION SYSTEM (ASDS)  
APPLICATION PROCEDURES. VOLUME III. DATA  
TABLES.

(U)

SEP 74 358P GOLDMAN, DONALD ; MAGINNIS,  
FRANCIS X. ;  
REPT. NO. MTR-6616-SER-1-VOL-3  
CONTRACT: DOT-FA69NS-162  
MONITOR: FAA-EQ 74-2-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED MAR 74,  
AD-786 614. SEE ALSO REPORT DATED MAR 74, AD-786  
613.

DESCRIPTORS: \*AIRPORTS, \*AIRCRAFT NOISE, NOISE  
POLLUTION, PERIODIC VARIATIONS,  
EXPOSURE (PHYSIOLOGY), ACOUSTIC MEASUREMENT,  
AIRCRAFT LANDINGS, TAKEOFF, DATA BASES  
IDENTIFIERS: \*NOISE EXPOSURE, \*NOISE LEVELS,  
\*AIRCRAFT SOUND DESCRIPTION SYSTEMS, SCENARIOS,  
DOT/40Z/DA, DOT/5B

(U)

(U)

THE AIRCRAFT SOUND DESCRIPTION SYSTEM  
(ASDS) IS A METHOD OF DESCRIBING AIRCRAFT NOISE.  
IT HAS BEEN ESTABLISHED AS THE BASIC FAA  
TECHNIQUE FOR PREDICTING COMMUNITY NOISE EXPOSURE  
CAUSED BY AIRCRAFT OPERATIONS. THIS REPORT (IN  
FOUR VOLUMES) IS A DESCRIPTION OF THE MANUAL AND  
COMPUTER TECHNIQUES FOR APPLYING ASDS AS WELL AS A  
CURRENT SET OF NOISE EXPOSURE CONTOURS. THIS VOLUME  
PRESENTS IN TABULAR FORM A SET OF 239 ASDS NOISE  
EXPOSURE CONTOURS COVERING 51 DIFFERENT AIRCRAFT  
TYPES. A DESCRIPTION OF THE DATA TABLES AND A  
STATEMENT OF CONDITIONS AND ASSUMPTIONS IN DEVELOPING  
THE DATA ARE PRESENTED. THE OTHER VOLUMES IN THE  
SET ARE: VOLUME 1, 'OVERVIEW,' VOLUME 2,  
'MANUAL APPLICATION PROCEDURES,' AND VOLUME  
4, 'COMPUTER APPLICATION PROCEDURES'. THIS  
DOCUMENT CONTAINS UPDATED VERSIONS OF THE TABLES  
PUBLISHED IN REPORT FAA-EQ-74-2, VOLUME 3,  
DATED MARCH 1974.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A014 237 6/19 5/5 1/2  
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

BIODYNAMIC RESPONSE TO WINDBLAST.

(U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS,  
JUL 75 87P GLAISTER, D. H. ;  
REPT. NO. AGARD-CP-170

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO FURNISHED.

DESCRIPTORS: \*BLAST LOADS, \*WIND, \*BIODYNAMICS,  
\*HUMAN FACTORS ENGINEERING, \*MEETINGS, WOUNDS AND  
INJURIES, PROTECTION, PROTECTIVE EQUIPMENT,  
NUCLEAR EXPLOSIONS, AIRCRAFT, AEROSPACE MEDICINE,  
NATO, EJECTION, EJECTION SEATS, VELOCITY,  
TOLERANCES (PHYSIOLOGY)

(U)

THE VOLUME CONTAINS THE TEXT, DISCUSSION AND  
TECHNICAL EVALUATION OF PAPERS PRESENTED AT THE  
AGARD AEROSPACE MEDICAL PANEL SPECIALISTS  
MEETING WHICH WAS HELD AT TORONTO, CANADA, 6  
MAY 1975. THE SPECIFIC PROBLEM OF WINDBLAST WAS  
CONSIDERED AS IT AFFECTS HUMAN TOLERANCE TO HIGH-  
SPEED EJECTION. INJURY MECHANISMS WERE DISCUSSED IN  
SEVERAL PAPERS AND IT WAS SHOWN THAT MOST INJURIES  
ARE CAUSED BY EXCESSIVE MOTION OF THE LIMBS, RATHER  
THAN BY THE DIRECT EFFECT OF WIND PRESSURE.  
EJECTION INJURY MECHANISMS WERE ALSO CONSIDERED IN  
RELATION TO WINDBLAST FROM CONVENTIONAL AND NUCLEAR  
EXPLOSIONS. PROTECTION WAS CONSIDERED ALONG TWO  
LINES. THE PREVENTION OF LIMB MOTION BY MEANS OF  
RESTRAINTS WAS SHOWN TO BE AS PRACTICAL FOR THE ARMS  
AS FOR THE LEGS, AND COULD BE EXTENDED TO PROVIDE THE  
ARM RETRACTION NEEDED IN SAFE COMMAND EJECTION. IT  
WAS ALSO SHOWN THAT THE PROVISION OF A STABLE  
EJECTION SEAT WOULD GREATLY AMELIORATE THE WINDBLAST  
PROBLEM. THE PROBLEMS OF HEAD RESTRAINT AND HELMET  
LOSS WERE ALSO CONSIDERED.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A014 516 5/7 17/2  
ROYAL AIRCRAFT ESTABLISHMENT FARNBOROUGH (ENGLAND)

THE EFFECT OF A TRACKING TASK ON SPEECH  
INTELLIGIBILITY IN NOISE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
MAR 75 49P JOHNSTON, MARY E. ;  
REPT. NO. RAE-TR-75014  
MONITOR: DRIC BR-46915

UNCLASSIFIED REPORT

DESCRIPTORS: \*SPEECH RECOGNITION, \*INTELLIGIBILITY,  
\*ACOUSTIC TRACKING, BACKGROUND NOISE, VOICE  
COMMUNICATIONS, ERRORS, PILOTS,  
PERFORMANCE(HUMAN), SIGNAL TO NOISE RATIO,  
WORD RECOGNITION, DISTURBANCES, COMMUNICATION AND  
RADIO SYSTEMS  
IDENTIFIERS: SPEECH INTELLIGIBILITY

(U)

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THE REPORT DESCRIBES AN INVESTIGATION WHICH WAS  
CARRIED OUT TO STUDY THE EFFECT ON SPEECH  
INTELLIGIBILITY IN NOISE OF SIMULTANEOUSLY PERFORMING  
A TRACKING TASK. THE RESULTS INDICATE THAT FOR SOME  
SUBJECTS THERE IS A SIGNIFICANT DETERIMENTAL EFFECT  
OF TRACKING ON SPEECH INTELLIGIBILITY, AND THAT THIS  
EFFECT MAY BE OFFSET BY IMPROVING THE SIGNAL/NOISE  
RATIOS OF COMMUNICATION. THESE RESULTS SUGGEST THAT  
IT IS INACCURATE TO USE DATA BASED ON CLASSICAL  
SINGLE-STRESS INTELLIGIBILITY TESTS IN THE DESIGN AND  
ASSESSMENT OF COMMUNICATION SYSTEMS TO BE USED IN  
MULTI-ACTIVITY, REAL LIFE SITUATIONS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 023 6/16 20/1  
LOUISVILLE UNIV FOUNDATION INC KY

HEARING CONSERVATION: INTENSE ACOUSTIC  
STIMULATION AND NOISE SUSCEPTIBILITY IN THE  
MILITARY ENVIRONMENT. (U)

DESCRIPTIVE NOTE: FINAL COMPREHENSIVE REPT. 1 OCT 71-31  
MAR 74,

NOV 74 10P LOEB, MICHEL ; BROWN, BILL R.  
; CAMERON, PAUL D. ; LUZ, GEORGE A. ;  
CONTRACT: DADA17-72-C-2039

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*DEAFNESS,  
\*NOISE(SOUND), INTENSITY, STIMULI,  
EXPOSURE(PHYSIOLOGY), ARMY OPERATIONS,  
CONSERVATION, ARMY PERSONNEL,  
THRESHOLDS(PHYSIOLOGY), SENSITIVITY, AUDITORY  
PERCEPTION, LOSSES, HAZARDS, PREVENTION,  
RECOVERY, STATISTICAL DISTRIBUTIONS,  
AUDIOMETRY (U)

IDENTIFIERS: \*HEARING CONSERVATION (U)

THE TECHNICAL OBJECTIVES OF THIS STUDY WERE:  
(1) ASSESSMENT OF CURRENT HAZARDS TO HEARING  
AND OF CURRENT HEARING CONSERVATION PRACTICES IN THE  
FIELD; (2) RESOLUTION OF CERTAIN QUESTIONS  
REGARDING PAST STUDIES OF TEMPORARY THRESHOLD SHIFT;  
(3) DETERMINATION OF THE HEARING CAPACITIES OF  
THOSE CURRENTLY IN THE MILITARY OR LIKELY TO BE,  
COMPARISON OF THOSE CAPACITIES WITH THOSE OF  
ANALOGOUS GROUPS IN YEARS PAST, AND ASSESSMENT OF THE  
PRACTICAL SIGNIFICANCE OF ANY CHANGES OBSERVED;  
(4) MEASUREMENTS OF CHANGES IN AUDITORY  
CHARACTERISTICS OTHER THAN ABSOLUTE INTENSIVE  
THRESHOLD, FOLLOWING NOISE EXPOSURE; AND (5)  
DEVELOPMENT OF INDICES OF SUSCEPTIBILITY TO  
PERMANENT HEARING LOSS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 086 1/5 13/12  
NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER ATLANTIC  
CITY N J

JET BLAST FENCE INVESTIGATION AT JOHN F.  
KENNEDY INTERNATIONAL AIRPORT.

(U)

DESCRIPTIVE NOTE: FINAL REPT.:

AUG 75 35P CHRISTIANSEN, GUENTHER H. ;  
REPT. NO. FAA-NA-75-36  
PROJ: FAA-214-531-030  
MONITOR: FAA-RD 75-121

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRPORTS, \*JET AIRCRAFT, \*BLAST,  
\*ATTENUATORS, PERFORMANCE TESTS, RUNWAYS, FLOW  
VISUALIZATION, TEST METHODS, MEASUREMENT,  
DETECTORS, INSTRUMENTATION, TAKEOFF, DATA  
ACQUISITION, OSCILLOSCOPES, VELOCITY  
IDENTIFIERS: \*BLAST FENCES, JET BLAST, DOT/  
4CZ/CA, DOT/5A, SAFETY ENGINEERING

(U)

(U)

A BLAST FENCE INSTALLED AT THE DEPARTURE END OF  
RUNWAY 31L AT JOHN F. KENNEDY INTERNATIONAL  
AIRPORT INTENDED TO PROTECT AIRCRAFT LANDING ON  
RUNWAY 4R FROM THE EFFECTS OF JET BLAST WAS  
BELIEVED TO BE INEFFECTIVE. TESTS WERE CONDUCTED IN  
TWO PHASES. THE INITIAL PHASE WAS SUBJECTIVE,  
USING SMOKE TO AID IN FLOW VISUALIZATION. THESE  
TESTS WERE INCONCLUSIVE AND LED TO A SECOND PHASE  
USING INSTRUMENTATION TO DETERMINE WHETHER OR NOT A  
JET BLAST WAS PRESENT ON RUNWAY 4R BEHIND THE BLAST  
FENCE. RESULTS OF PHASE II CONFIRMED THE  
PRESENCE OF A JET BLAST. TESTS COVERED SEVEN  
AIRCRAFT TYPES AND INDICATED MAXIMUM BLAST VELOCITIES  
AT RUNWAY 4R OF 35 MILES PER HOUR ABOVE AMBIENT  
WIND.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 732 6/16  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

EFFECTS OF SUSTAINED TALKING ON THE HEARING  
OF THE TALKER,

(U)

AUG 75 25P NIXON, CHARLES W. ;  
REPT. NO. AMRL-TR-75-39  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*SPEECH, INTENSITY,  
AUDITORY ACUITY, SENSITIVITY, LOSSES,  
THRESHOLDS(PHYSIOLOGY), FATIGUE(PHYSIOLOGY),  
DEAFNESS, PSYCHOACOUSTICS, VOLUME, CONTINUITY,  
TIME DEPENDENCE, SELF NOISE, AUDIOMETRY  
IDENTIFIERS: LOUDNESS

(U)

(U)

THE EFFECTS ON HEARING SENSITIVITY OF LOUD TALKING  
AT 90 DBC FOR BRIEF DURATIONS OF 3 TO 12 MINUTES  
AND OF SUSTAINED TALKING AT 65 DB(A) AND 75 DB(A)  
FOR PERIODS OF 30 TO 120 MINUTES WERE MEASURED.  
LOSS OF HEARING SENSITIVITY FOLLOWING SPEECH  
EXPOSURE SESSIONS WERE ATTRIBUTED TO THE TALKING.  
RESULTS OF THREE STUDIES CONTAINED IN THE REPORT  
INCLUDE: (1) SELF-GENERATED SPEECH AT A  
LEVEL OF ABOUT 90 DB(C) PRODUCED SMALL DECREASES  
OF 2 TO 6 DB IN HEARING THRESHOLD SENSITIVITY  
FOLLOWING 3 TO 12 MINUTE PERIODS OF TALKING; (2)  
CONTINUOUS TALKING FOR PERIODS OF 30 TO 120 MINUTES  
AT LEVELS OF ABOUT 65 DB(A) HAD NO EFFECT ON THE  
HEARING OF THE TALKER AND (3) SUSTAINED SPEECH,  
EITHER SELF-GENERATED OR PRESENTED BY LOUDSPEAKER, AT  
VOICE LEVELS OF 65 DB(A) AND 75 DB(A) FOR  
CONTINUOUS PERIODS UP TO 120 MINUTES HAD NO EFFECT ON  
THE HEARING OF THE SUBJECT. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 735 20/1 6/16  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

A-WEIGHTED SOUND LEVELS IN COCKPITS OF  
FIXED- AND ROTARY-WING AIRCRAFT.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. DEC 72-DEC 74,  
AUG 75 27P GASAWAY, DONALD C. ;  
REPT. NO. SAM-TR-75-22  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: •AIRCRAFT NOISE, •HEARING,  
CONSERVATION, FLIGHT CREWS, PILOTS, BACKGROUND  
NOISE, INTENSITY, COCKPITS, MILITARY AIRCRAFT,  
ROTARY WING AIRCRAFT, VOICE COMMUNICATIONS,  
INTERFERENCE, ENGINE NOISE, LEVEL(QUANTITY),  
ACOUSTIC MEASUREMENT, FATIGUE(PHYSIOLOGY),  
DEAFNESS, RISK, LOSSES, HEADGEAR, FLIGHT  
HELMETS, AVIATION MEDICINE, HELICOPTERS  
IDENTIFIERS: FIXED WING AIRCRAFT

(U)

(U)

NOISE MEASUREMENTS OBTAINED WITHIN THE COCKPITS OF  
339 FIXED- AND ROTARY-WING AIRCRAFT DURING NORMAL  
CRUISE ARE REPORTED. THE SAMPLE INCLUDES 271 FIXED-  
WING AND 68 ROTARY-WING AIRCRAFT THAT ARE GROUPED  
ACCORDING TO TYPE AND NUMBER OF POWER PLANTS. MEAN  
A-WEIGHTED LEVELS RANGED FROM 92 TO 105 DB FOR  
FIXED-WING VEHICLES AND FROM 98 TO 106 DB FOR  
HELICOPTERS. MEANS AND STANDARD DEVIATIONS ARE  
REPORTED BY OCTAVE-BANDS, ALL-PASS (FLAT), A-  
LEVELS, AND PREFERRED SPEECH INTERFERENCE LEVELS  
(PSIL, AVERAGE OF 500, 1000 AND 2000 HZ).  
ALSO, AT-THE-EAR A-LEVELS ARE REPORTED FOR  
GENERALIZED AMOUNTS OF ATTENUATION PROVIDED BY  
HEADSETS COMMONLY WORN IN AIRCRAFT. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A017 269 6/16 20/1  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

AUDITORY AND PHYSIOLOGICAL EFFECTS OF  
INFRASOUND,

(U)

SEP 75 8P JOHNSON, DANIEL L. ;  
REPT. NO. AMRL-TR-75-33  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN PROCEEDINGS OF INTER-  
NOISE 75, INTERNATIONAL CONFERENCE ON NOISE  
CONTROL ENGINEERING, INST. OF NOISE CONTROL  
ENGINEERING (USA), 27-29 AUG 75, SENDAI  
(JAPAN), P475-482 1975.

DESCRIPTORS: \*INFRASONICS, PHYSIOLOGICAL EFFECTS,  
RESPONSE(BIOLOGY), AUDITORY PERCEPTION,  
VIBRATION, THRESHOLDS(PHYSIOLOGY), TRAUMA,  
TOLERANCES(PHYSIOLOGY), PAIN, IRRITATION,  
NOISE POLLUTION, HUMANS, LABORATORY ANIMALS,  
REPRINTS

(U)

IDENTIFIERS: ANNOYANCE

(U)

THIS PAPER IS ORGANIZED INTO FOUR SECTIONS:  
AUDITORY, PHYSIOLOGICAL, INFRASOUND AND  
VIBRATION, AND ANNOYANCE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-AD17 915 13/2 20/1 6/10  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

NOISE -- HOW MUCH IS TOO MUCH, (U)

MAY 75 12P VON GIERKE, HENNING E. ;  
REPT. NO. AMRL-TR-74-81  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN NOISE CONTROL  
ENGINEERING, V5 N1 P24-34 JUL-AUG 75.  
SUPPLEMENTARY NOTE: PRESENTED AT NOISE-CON 1975,  
GAITHERSBURG, MD.

DESCRIPTORS: \*NOISE POLLUTION, \*ENVIRONMENTAL  
PROTECTION, \*NOISE REDUCTION, STANDARDS,  
INDUSTRIAL MEDICINE, PUBLIC HEALTH,  
NOISE(SOUND), LIMITATIONS,  
EXPOSURE(PHYSIOLOGY), STRESS(PHYSIOLOGY),  
INTENSITY, PEAK VALUES, DEAFNESS, HEARING,  
THRESHOLDS(PHYSIOLOGY), CONSERVATION, REPRINTS (U)

THE AUTHOR CONTENDS THAT ENOUGH IS KNOWN ABOUT THE  
EFFECTS OF NOISE ON PEOPLE TO PRODUCE GUIDELINES FOR  
MAXIMUM NOISE LEVELS. ADOPTED BY THE  
ENVIRONMENTAL PROTECTION AGENCY, THESE  
GUIDELINES ARE DESIGNED TO PROTECT THE PUBLIC WITH AN  
ADEQUATE MARGIN OF SAFETY AGAINST HEARING LOSS FROM  
OCCUPATIONAL AND ENVIRONMENTAL NOISE EXPOSURES AND  
AGAINST INTERFERENCE WITH SPEECH OR OTHER ACTIVITIES  
INDOORS OR OUTDOORS IN RESIDENTIAL AREAS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A018 036 20/1 1/2 5/10  
MAN-ACOUSTICS AND NOISE INC SEATTLE WASH

NOISE CERTIFICATION CRITERIA AND  
IMPLEMENTATION CONSIDERATIONS FOR V/STOL  
AIRCRAFT. VOLUME I.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

NOV 75 84P  
REPT. NO. MAN-101H  
CONTRACT: DOT-FA74WAI-490  
MONITOR: FAA-RD 75-190

UNCLASSIFIED REPORT

DESCRIPTORS: \*COMMERCIAL AIRCRAFT, \*AIRCRAFT NOISE,  
\*SHORT TAKEOFF AIRCRAFT, \*PSYCHOPHYSICS,  
INTENSITY, EXPERIMENTAL DATA, TEST METHODS,  
HUMAN FACTORS ENGINEERING, MAGNETIC TAPE,  
STANDARDS, VERTICAL TAKEOFF AIRCRAFT, RATINGS  
IDENTIFIERS: ANNOYANCE, NOISE LEVELS,  
CERTIFICATION, JUDGMENT, CRITERIA, DOT/2A,  
DOT/5B

(U)

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AS A MEANS OF DETERMINING THE ACCURACY AND  
RELIABILITY OF ENGINEERING CALCULATION PROCEDURES  
THAT COULD BE UTILIZED AS A BASIS FOR NOISE  
CERTIFICATION OF V/STOL COMMERCIAL AIRCRAFT, 36  
PERSONS MADE ANNOYANCE JUDGMENTS TO 34 NOISE SIGNALS  
PRESENTED AT 5 DIFFERENT LEVELS. THE SIGNALS  
INCLUDED RECORDINGS OF CONVENTIONAL JET AIRCRAFT  
OPERATIONS, TURBOPROP AND RECIPROCATING ENGINE  
POWERED COMMERCIAL AIRCRAFT, HELICOPTER FLYBYS, AND  
SIMULATIONS OF V/STOL OPERATIONS. BOTH  
RELATIVE ANNOYANCE AND ABSOLUTE ACCEPTABILITY  
JUDGMENTS WERE OBTAINED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A018 667 5/8 5/10  
SYSTEMS TECHNOLOGY INC HAWTHORNE CALIF

EFFECTS OF WIDEBAND AUDITORY NOISE ON  
MANUAL CONTROL PERFORMANCE AND DYNAMIC  
RESPONSE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUL 71-MAR 75,  
OCT 75 31P ALLEN, R. WADE ; MAGDALENO,  
RAYMOND E. ; JEX, HENRY R. ;  
REPT. NO. STI-TR-1027-2  
CONTRACT: F33615-73-C-4003  
PROJ: AF-7231  
TASK: 723101  
MONITOR: AMRL TR-75-65

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE(SOUND), \*MANUAL OPERATION,  
\*DYNAMIC RESPONSE, \*PERFORMANCE(HUMAN), \*WHITE  
NOISE, STRESS(PHYSIOLOGY), CONTROL, INTENSITY,  
PITCH(MOTION), ROLL, SIMULATION, FLIGHT  
CREWS, OPERATORS(PERSONNEL), AUDITORY SIGNALS,  
TRACKING, VIBRATION, PSYCHOMOTOR FUNCTION,  
STRESS(PSYCHOLOGY), BROADBAND

(U)

NOISE IS A COMMON STRESS IN THE AEROSPACE  
ENVIRONMENT, AND THE PURPOSE OF THIS STUDY WAS TO  
INVESTIGATE ITS EFFECT ON MANUAL CONTROL PERFORMANCE  
AND ASSOCIATED BEHAVIOR. NINE SUBJECTS WERE  
SUBJECTED TO WHITE NOISE AT FOUR INTENSITY LEVELS OF  
55 DB, 75 DB, 95 DB, AND 115 DB WHILE  
PERFORMING A SIMULATED PITCH/ROLL TRACKING TASK WITH  
A HIGH ATTENTIONAL DEMAND. PERFORMANCE ACTUALLY  
IMPROVED UNDER NOISE, PRESUMABLY DUE TO AN AROUSAL  
EFFECT. THE HUMAN OPERATOR'S DYNAMIC RESPONSE  
PROPERTIES WERE NOT AFFECTED BY NOISE, HOWEVER, AND  
THE PERFORMANCE EFFECTS AROSE FROM A REDUCTION IN  
REMNANT (SUBJECT TRACKING NOISE) AND POSSIBLY  
CROSS COUPLING INTERNAL TO THE OPERATOR. A MEASURE  
OF SUBJECTIVE REACTION TO THE NOISE ENVIRONMENT  
SHOWED HIGH SENSITIVITY TO THE VARIOUS NOISE LEVELS  
AND SOME HABITUATION OVER THREE EXPERIMENTAL  
SESSIONS. ALSO, TRACKING PERFORMANCE SHOWED STEADY  
IMPROVEMENT OVER THE THREE SESSIONS, PROBABLY DUE TO  
LEARNING. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A018 846 6/19 6/6  
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

EFFECTS OF LONG DURATION NOISE EXPOSURE ON  
HEARING AND HEALTH.

(U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS,  
NOV 75 97P WHITCOMB, MILTON A. ;  
REPT. NO. AGARD-CP-171

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO FURNISHED.

DESCRIPTORS: \*STRESS(PHYSIOLOGY), \*FLIGHT CREWS,  
\*HEARING, \*NOISE(SOUND), \*MEETINGS,  
EXPOSURE(PHYSIOLOGY), AEROSPACE MEDICINE,  
AUDITORY PERCEPTION, LOSSES,  
RESPONSE(BIOLOGY), HUMANS, PHYSIOLOGICAL  
EFFECTS, AIRCRAFT NOISE, TABLES(DATA),  
NATO

(U)

IDENTIFIERS: NOISE POLLUTION

(U)

;CONTENTS: MODE OF COCHLEAR DAMAGE BY EXCESSIVE  
NOISE - AN OVERVIEW; TTS IN MAN FROM A 24-HOUR  
EXPOSURE TO AN OCTAVE BAND OF NOISE CENTERED AT 4  
KHZ; PROTECTIVE EFFECTS IN MEN OF BRAIN CORTEX  
GANGLIOSIDES ON THE HEARING LOSS INDUCED BY HIGH  
LEVELS OF NOISE; STUDIES OF ASYMPTOTIC TTS;  
ASYMPTOTIC BEHAVIOR OF TEMPORARY THRESHOLD SHIFT  
DURING EXPOSURE TO LONG DURATION NOISES; THE  
INCIDENCE OF TEMPORARY AND PERMANENT HEARING LOSS  
AMONG AIRCREWS EXPOSED TO LONG-DURATION NOISE IN  
MARITIME PATROL AIRCRAFT; PSYCHO-PHYSICAL  
PERFORMANCE OF AIR FORCE TECHNICIANS AFTER LONG  
DURATION NOISE EXPOSURE; THE EFFECTS OF EAR  
PROTECTORS ON SOME AUTONOMIC RESPONSES TO AIRCRAFT-  
AND IMPULSIVE NOISE; INFLUENCE OF THE NOISE ON  
CATECHOLAMINE EXCRETION; EFFECTS OF NOISE EXPOSURE;  
PHYSIOLOGICAL EFFECTS OF NOISE; AN INVESTIGATION  
OF AIRCRAFT VOICE COMMUNICATION SYSTEMS AS SOURCES OF  
INSIDIOUS LONG-TERM ACOUSTIC HAZARDS; PHYSIOLOGICAL  
RESPONSES DUE TO NOISE IN INHABITANTS AROUND MUNICH  
AIRPORT.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A019 193 6/10 6/16  
WALTER REED ARMY MEDICAL CENTER WASHINGTON D C AUDIOLOGY  
AND SPEECH CENTER

THE PREVALENCE OF HEARING LOSS WITHIN  
SELECTED U.S. ARMY BRANCHES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
AUG 75 103P WALDEN, BRIAN E. ; PROSEK,  
ROBERT A. ; WORTHINGTON, DON W. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH ARMY  
AEROMEDICAL RESERACH LAB., FT. RUCKER, ALA.

DESCRIPTORS: \*HEARING, \*OCCUPATIONAL DISEASES,  
\*NOISE POLLUTION, \*DEAFNESS, AUDIOMETRY,  
QUESTIONNAIRES, PROFILES, LOSSES, PROTECTIVE  
EQUIPMENT, EXPOSURE(PHYSIOLOGY), ENLISTED  
PERSONNEL, FREQUENCY BANDS, SPEECH RECOGNITION,  
INDUSTRIAL HYGIENE, STATISTICAL SAMPLES,  
AGING(PHYSIOLOGY), TIME, CONSERVATION,  
INFANTRY, ARMOR, ARTILLERY, RECRUITS

(U)

THE PURPOSE OF THIS INVESTIGATION WAS TO DERIVE  
ESTIMATES OF THE PREVALENCE OF HEARING LOSS WITHIN  
U.S. ARMY BRANCHES SUSPECTED TO BE HIGH-RISK  
WITH REGARD TO HEARING LOSS. QUESTIONNAIRE DATA  
WERE OBTAINED FROM HIGH-RISK PERSONNEL CONCERNING  
THEIR OPINIONS OF THEIR HEARING ABILITY, HEARING  
PROTECTIVE DEVICES, AND EXPOSURE TO HAZARDOUS NOISES.  
AUDIOMETRIC AND QUESTIONNAIRE DATA WERE OBTAINED  
FROM 3000 ENLISTED MEN REPRESENTING THREE COMBAT  
BRANCHES (I.E., INFANTRY, ARMOR, ARTILLERY) AND  
FIVE TIME-IN-SERVICE CATEGORIES. SUBJECTS WERE  
SELECTED AT RANDOM, IN PROPORTION TO POPULATION  
SIZES, FROM TEN ARMY POSTS. ALL OF THE DATA  
GATHERING WAS ACCOMPLISHED BY THE AUDIOLOGY  
OFFICER(S) ASSIGNED TO EACH POST. THE RESULTS  
SUGGEST THAT THE PREVALENCE OF HEARING LOSS IS  
APPROXIMATELY THE SAME IN THE INFANTRY, ARMOR AND  
ARTILLERY BRANCHES. IN CONTRAST, THERE ARE  
SUBSTANTIAL DIFFERENCES IN THE PREVALENCE OF HEARING  
LOSS ACCORDING TO LENGTH OF TIME IN SERVICE.  
FURTHER, THE PROBLEM OF PREMATURE HEARING LOSS  
AMONG U.S. ARMY TROOPS AFFECTS ONLY THE MID- TO  
HIGH-FREQUENCY RANGE IN THE MAJORITY OF SOLDIERS,  
WITH SPEECH-RECEPTION THRESHOLDS AND SPEECH  
DISCRIMINATION IN QUIET FREQUENTLY REMAINING WITHIN  
NORMAL LIMITS EVEN IN ADVANCED CASES OF NOISE-INDUCED  
HEARING LOSS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A019 315 5/10 6/19  
ROYAL NAVAL PERSONNEL RESEARCH COMMITTEE LONDON  
(ENGLAND)

INTERACTIONS AND RANGE EFFECTS IN EXPERIMENTS  
IN PAIRS OF STRESSES: MILD HEAT AND LOW  
FREQUENCY NOISE, (U)

JAN 74 17P POULTON, E. C. ; EDWARDS, R.  
S. I  
REPT. NO. OES-8/74  
MONITOR: DRIC BR-49195

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR THE OPERATIONAL  
EFFICIENCY SUBCOMMITTEE.

DESCRIPTORS: \*NOISE(SOUND), \*HEAT  
STRESS(PHYSIOLOGY), \*STRESS(PHYSIOLOGY),  
\*PERFORMANCE(HUMAN), PSYCHOPHYSIOLOGY, LOW  
NOISE, STRESSES, SYNERGISM, VIGILANCE, SLEEP  
DEPRIVATION, EFFECTIVENESS, EXPERIMENTAL DATA,  
HUMANS, GREAT BRITAIN (U)

MODERATELY LOUD NOISE OF LOW FREQUENCY IMPROVES  
PERFORMANCE. WHEN PRESENTED WITH MILD HEAT, THE  
COMBINED EFFECT OF THE 2 STRESSES CAN BE SMALLER THAN  
THE SUM OF THE 2 SEPARATE EFFECTS. HOWEVER CAUTION  
IS NECESSARY IN INTERPRETING THIS RESULT BECAUSE  
PERFORMANCE IN THE CONTROL CONDITION IS AFFECTED BY  
THE PAIR OF STRESSES USED IN THE EXPERIMENT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A021 203 6/12 6/19  
ARMY AEROMEDICAL RESEARCH LAB FORT RUCKER ALA

BLOOD PRESSURE MEASUREMENT IN A HIGH NOISE  
ENVIRONMENT, SELECT BIBLIOGRAPHY OF BOOKS,  
JOURNAL ARTICLES AND DOCUMENTS. (U)

DESCRIPTIVE NOTE: REPT. FOR 1963-1975,  
JAN 76 12P BULLOCK, SYBIL H. ;  
REPT. NO. USAARL-SPECIAL BIB-SER-6

UNCLASSIFIED REPORT

DESCRIPTORS: \*BIBLIOGRAPHIES, \*MEDICAL EQUIPMENT,  
\*BLOOD PRESSURE, \*NOISE, ULTRASONICS, MEASURING  
INSTRUMENTS, PHYSIOLOGICAL EFFECTS, AUTOMATION,  
STRESS(PHYSIOLOGY) (U)  
IDENTIFIERS: \*BLOOD PRESSURE MANOMETERS (U)

TITLES OF BOOKS, JOURNAL ARTICLES, AND DOCUMENTS  
ARE INCLUDED IN THIS SELECT BIBLIOGRAPHY ON BLOOD  
PRESSURE MEASUREMENT IN A HIGH NOISE ENVIRONMENT.  
SUBJECTS COVERED INCLUDE ULTRASONICS, AUTOMATED AND  
DIGITAL READ-OUT DEVICES FOR DETERMINING BLOOD  
PRESSURE. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A021 465 6/10 6/19  
ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GROUND  
MD

NOISE HAZARD EVALUATION SOUND LEVEL DATA  
ON NOISE SOURCES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
JAN 75 60P GOLDSTEIN,JEFFREY ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*INDUSTRIAL HYGIENE, \*NOISE(SOUND),  
HEARING, HAZARDS, EXPOSURE(PHYSIOLOGY),  
MILITARY OPERATIONS, PERSONNEL, FREQUENCY,  
THRESHOLDS(PHYSIOLOGY), HUMANS, SOURCES

(U)

IDENTIFIERS: \*HEARING CONSERVATION, ENVIRONMENTAL  
HEALTH, OCCUPATIONAL SAFETY AND HEALTH,  
EVALUATION

(U)

THE TECHNICAL GUIDE WAS DEVELOPED AS AN AID AND  
SIMPLIFICATION OF THE NOISE HAZARD ASSESSMENT ELEMENT  
OF THE INSTALLATION HEARING CONSERVATION PROGRAM.  
PART I OF THE TECHNICAL GUIDE PROVIDES THE READER  
WITH BASIC INFORMATION NECESSARY FOR THE CONDUCT OF A  
ROUTINE OCCUPATIONAL NOISE HAZARD EVALUATION, WHILE  
PART II PROVIDES ADDITIONAL INFORMATION AND  
GUIDANCE CONCERNING TYPICAL PERSONNEL EXPOSURES TO  
MILITARY NOISE SOURCES.

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DDC REPORT BIBLIOGRAPHY    SEARCH CONTROL NO. /ZOM07

AD-A021 683            20/1        5/10        1/5  
MAN-ACOUSTICS AND NOISE INC SEATTLE WASH

ESTABLISHING NOISE CRITERIA FOR RESIDENTIAL  
LIVING IN AREAS SURROUNDING COMMERCIAL  
AVIATION AIRPORTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

DEC 75    73P

REPT. NO. MAN-1011

CONTRACT: DOT-FA74WAI-439

MONITOR: FAA-RD            75-211

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE POLLUTION, \*AIRPORTS,  
\*COMMUNITY RELATIONS, \*COMMERCIAL AVIATION, TEST  
METHODS, RESIDENTIAL SECTION, SIMULATION, DATA  
ACQUISITION, RESPONSE, DIURNAL VARIATIONS, DAY,  
NIGHT

(U)

IDENTIFIERS: CRITERIA, ANNOYANCE, DOT/2 A,  
DOT/5 B, NOISE LEVELS

(U)

THIS STUDY PROVIDES RESULTS THAT CONTRIBUTE TO  
ESTABLISHMENT OF AIRPORT NOISE LEVELS THAT ARE  
COMPATIBLE WITH RESIDENTIAL LIVING ACTIVITIES.  
COMMUNITY NOISE SIMULATION SYSTEMS WERE PLACED IN  
THE HOMES OF TWENTY-FOUR FAMILIES THAT WERE NOT  
IMPACTED BY ACTUAL AIRPORT NOISE. FOUR DIFFERENT  
AIRPORT NOISE CONDITIONS WERE SIMULATED. THREE  
CONDITIONS INVOLVED DAY FLIGHTS OF 150 AIRCRAFT WITH  
AVERAGE NOISE EXPOSURE FORECAST (NEF) VALUES  
OF 36.9, 32.5, AND 26.9. THE FOURTH CONDITION ADDED  
18 NIGHT FLIGHTS (10:00 PM TO 7:00 AM)  
WHICH RESULTED IN A MEAN NEF OF 32.9.  
INTERFERENCE WITH DAILY LIVING ACTIVITIES AND  
ANNOYANCE RESPONSES TO THE FOUR CONDITIONS WERE  
OBTAINED. SOME OF THE RESULTS AND CONCLUSIONS ARE  
PRESENTED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 258 6/10  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

HEARING OF PERSONNEL INCLUDED IN THE USAF  
HEARING CONSERVATION PROGRAM.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. JAN-OCT 75,  
FEB 76 27P GASAWAY, DONALD C. ;  
SUTHERLAND, HARRELL C. , JR. IDANFORD, ROY , JR;  
REPT. NO. SAM-TR-76-8  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*NOISE(SOUND), \*NOISE  
POLLUTION, AGING(PHYSIOLOGY), AUDIOMETRY,  
OCCUPATIONAL DISEASES, PUBLIC HEALTH, DEAFNESS,  
HAZARDS, EAR, AUDITORY ACUITY

(U)

RESULTS OF ANNUAL AUDIOMETRIC MONITORING OF 26,446  
PERSONNEL (22,817 MILITARY AND 3,629 CIVILIAN  
EMPLOYEES) DURING JANUARY THROUGH MARCH 1975  
ARE REPORTED. MEAN AND MEDIAN HEARING LEVELS ARE  
REPORTED SEPARATELY FOR MILITARY AND CIVILIAN  
PERSONNEL AT TEST FREQUENCIES OF 500 THROUGH 6000  
HZ FOR RIGHT AND LEFT EARS. AGE GROUPINGS  
INCLUDED IN THIS STUDY RANGED FROM 17-19 AND 5-YEAR  
INTERVALS THEREAFTER UP TO AGE 49, WITH A FINAL AGE  
GROUP OF 50 AND OLDER. MEDIAN HEARING LEVELS ARE  
REPORTED FOR CURRENT ANNUAL AND REFERENCE  
(AUDIOMETRIC BASELINE) AUDIOGRAMS. RESULTS  
REVEALED THAT 98.9% OF BOTH LEFT AND RIGHT EARS OF  
22,817 MILITARY PERSONNEL AND 95.05% OF LEFT EARS  
AND 94.84% OF RIGHT EARS OF CIVILIAN EMPLOYEES THAT  
ROUTINELY WORK IN POTENTIALLY HAZARDOUS NOISE SHOWED  
HEARING LEVELS AT 500, 1000, AND 2000 HZ THAT  
AVERAGED 30 DB OR BETTER. (AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 356 6/19 5/10 1/2  
MAN-ACOUSTICS AND NOISE INC SEATTLE WASH

REVIEW OF STUDIES INVESTIGATING HUMAN  
RESPONSE TO COMMERCIAL AIRCRAFT NOISE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

NOV 75 156P

REPT. NO. MAN-1011B

CONTRACT: DOT-FA74WAI-439

MONITOR: FAA-RD 75-182

UNCLASSIFIED REPORT

DESCRIPTORS: •STRESS(PHYSIOLOGY), •AIRCRAFT  
NOISE, •COMMERCIAL AIRCRAFT, •NOISE,  
RESPONSE(BIOLOGY), HUMANS, REVIEWS,  
AIRPORTS, EXPERIMENTAL DATA, AUDITORY PERCEPTION,  
HEARING

(U)

IDENTIFIERS: •NOISE POLLUTION, ENVIRONMENTAL  
HEALTH

(U)

THE REPORT REVIEWS EMPIRICAL STUDIES INVOLVING  
HUMAN RESPONSE TO COMMERCIAL AIRCRAFT/AIRPORT NOISE.  
THE REVIEW WAS LIMITED TO STUDIES THAT INVOLVED  
RESPONSE TO ACTUAL OR RECORDED FLYOVER SIGNALS OF  
CONVENTIONAL TAKEOFF AND LANDING (CTOL) AIRCRAFT.  
STUDY SUMMARIES ARE PROVIDED FOR THE STUDIES  
REVIEWED. THESE SUMMARIES INCLUDED STUDY AIM,  
NUMBER OF SUBJECTS, TYPE OF AIRCRAFT SIGNALS, AND  
RESULTS. STUDY METHODS IDENTIFIED WERE LABORATORY,  
FIELD STUDIES, SOCIAL SURVEY APPROACH, COMPLAINT  
STUDIES, DAMAGE RISK, INTERFERENCE TYPE STUDIES, AND  
COMBINATION METHODS. LABORATORY METHODS HAVE  
DOMINATED RESEARCH WORK IN THIS AREA AND WITH THE  
EXCEPTION OF THE SOCIAL SURVEY AND COMPLAINT METHODS,  
EMPHASIS HAS BEEN ON RESPONSE TO INDIVIDUAL FLYOVER  
EVENTS. A FEW RECENT STUDIES HAVE STUDIED RESPONSE  
TO NUMBER OF EVENTS OVER TIME, PARTICULARLY  
INTERFERENCE TYPE STUDIES. RESEARCH NEEDS ARE  
IDENTIFIED EMPHASIZING THE MORE REALISTIC METHODS  
WHICH INVESTIGATE HUMAN RESPONSE TO MULTIPLE EVENTS  
OVER TIME.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 519 6/5 6/16  
WASHINGTON UNIV SEATTLE DEPT OF OTOLARYNGOLOGY

REACTION-TIME PROCEDURE FOR MEASUREMENT OF  
HEARING. I. SUPRATHRESHOLD FUNCTIONS, (U)

APR 74 10P PFINGST, BRYAN E. ; HIENZ,  
ROBERT ; KIMM, JOSEPH ; MILLER, JOSEF ;  
CONTRACT: N00014-67-A-0103-0031, PHS-NS-08181  
PROJ: RR001-66

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN JNL. OF THE ACOUSTICAL  
SOCIETY OF AMERICA, V57 N2 P421-430 FEB 75.  
SUPPLEMENTARY NOTE: SEE ALSO AD-A022 520.

DESCRIPTORS: \*HEARING, \*REACTION TIME, \*SOUND  
PRESSURE, STIMULI, HIGH INTENSITY,  
NOISE(SOUND), DEAFNESS, HUMANS, MONKEYS,  
PSYCHOPHYSIOLOGY, AUDIO TONES, REPRINTS (U)  
IDENTIFIERS: SUPRATHRESHOLD FUNCTIONS,  
LOUDNESS (U)

REACTION TIME (RT), OR RESPONSE LATENCY, TO  
AUDITORY STIMULI HAS BEEN SUGGESTED AS A MEASURE OF  
LOUDNESS IN NONVERBAL ANIMALS AS WELL AS IN MAN. IN  
THIS STUDY RT FUNCTIONS WERE OBTAINED FOR HUMAN AND  
RHESUS MONKEY SUBJECTS UNDER NORMAL CONDITIONS AND  
UNDER CONDITIONS OF HEARING IMPAIRMENT. IN BOTH  
HUMANS AND MONKEYS RT VARIED IN A SIMILAR MANNER  
WITH CHANGES IN INTENSITY AND FREQUENCY OF THE  
STIMULUS, AND IN RESPONSE TO EXPERIMENTAL  
MANIPULATION OF THE RECEPTOR ORGAN. THE STUDY  
DEMONSTRATED THAT LATENCY FUNCTIONS ARE SIMILAR TO  
FUNCTIONS DERIVED BY LOUDNESS-MATCHING PROCEDURES IN  
HUMANS: IN SUBJECTS WITH NORMAL HEARING, EQUAL-  
LATENCY CONTOURS CORRESPONDED CLOSELY WITH EQUAL-  
LOUDNESS CONTOURS. IN SUBJECTS WITH IMPAIRED  
HEARING, MATCHED-LATENCY AND MATCHED-LOUDNESS  
CONTOURS ALSO CORRESPONDED CLOSELY. RATE OF  
DECREASE IN RT WITH INCREASING INTENSITY IS  
DISCUSSED AND RELATED TO RATE OF GROWTH IN LOUDNESS.  
THE RESULTS SUGGEST THAT RT IS A VALUABLE MEASURE  
OF SUPRATHRESHOLD HEARING IN HUMAN AND NONHUMAN  
PRIMATES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 520 6/5 6/16  
WASHINGTON UNIV SEATTLE DEPT OF OTOLARYNGOLOGY

REACTION-TIME PROCEDURE FOR MEASUREMENT OF  
HEARING. II. THRESHOLD FUNCTIONS, (U)

APR 74 6P PFINGST, BRYAN E. ; HIENZ,  
ROBERT ; MILLER, JOSEF ;  
CONTRACT: N00014-67-A-0103-0031, PHS-NS-08181  
PROJ: RRO01-66

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN JNL. OF THE ACOUSTICAL  
SOCIETY OF AMERICA, V57 N2 P431-436 FEB 75.  
SUPPLEMENTARY NOTE: SEE ALSO AD-A022 519.

DESCRIPTORS: \*HEARING, \*REACTION TIME, \*SOUND  
PRESSURE, STIMULI, HIGH INTENSITY,  
NOISE(SOUND), DEAFNESS, HUMANS, RHESUS  
MONKEYS, PSYCHOPHYSIOLOGY, AUDIO TONES,  
REPRINTS (U)  
IDENTIFIERS: THRESHOLD FUNCTIONS (U)

THE REACTION-TIME (RT) PROCEDURE APPLIED TO THE  
MEASUREMENT OF SUPRATHRESHOLD FUNCTIONS IN THE PRECEDING  
PAPER MAY ALSO BE USED TO MEASURE THRESHOLD. THIS  
PAPER EXAMINES THRESHOLD CONTOURS MEASURED BY THE  
RT PROCEDURE IN HUMAN AND MONKEY SUBJECTS WITH  
NORMAL AND IMPAIRED HEARING. IN THE HUMAN SUBJECTS,  
THRESHOLDS OBTAINED USING THE RT PROCEDURE CLOSELY  
PARALLEL THOSE OBTAINED IN THE CLINIC BUT WERE AN  
AVERAGE OF 2.7 DB LOWER; RT THRESHOLDS WERE AN  
AVERAGE OF 5DB ABOVE THRESHOLDS OBTAINED IN A  
FORCE-CHOICE PROCEDURE. THRESHOLDS OBTAINED FROM  
MONKEY SUBJECTS PARALLELED THE NORMAL HUMAN CONTOURS  
WITHIN THE HUMAN FREQUENCY RANGE OF HEARING, BUT  
WERE SLIGHTLY HIGHER AT FREQUENCIES BELOW 4KHZ AND  
LOWER AT FREQUENCIES ABOVE 4KHZ. THE MONKEYS'  
HEARING EXTENDED APPROXIMATELY 1 1/4 OCTAVES ABOVE  
THE HUMANS. THRESHOLD MEASURED USING THE RT  
PROCEDURE IN HUMAN AND MONKEY SUBJECTS AGREED WELL  
WITH THRESHOLDS PREVIOUSLY REPORTED IN THE  
LITERATURE. THE EFFECTS OF SOUND PRESENTATION AND  
CALIBRATION PROCEDURES ON THE SHAPE AND POSITION OF  
THE THRESHOLD CONTOURS ARE EXAMINED IN AN APPENDIX.  
(AUTHOR) (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 842 6/10 6/5  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

SIGNIFICANT HEARING THRESHOLD SHIFT IN USAF  
MILITARY PERSONNEL: JANUARY-JUNE 1975.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT.,  
FEB 76 12P GASAWAY, DONALD C. ;  
SUTHERLAND, HARRELL C. , JR;  
REPT. NO. SAM-TR-76-10  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: \*AUDITORY ACUITY, \*OCCUPATIONAL  
DISEASES, AUDIOMETRY, THRESHOLDS(PHYSIOLOGY),  
NOISE(SOUND), EPIDEMIOLOGY, AIR FORCE  
PERSONNEL, MILITARY PERSONNEL, EAR, HEARING,  
NOISE POLLUTION, DEAFNESS, SENSES(PHYSIOLOGY),  
JOBS, MILITARY APPLICATIONS

(U)

HEARING CONSERVATION AUDIOMETRY REPORTS RECEIVED AT  
THE USAF HEARING CONSERVATION DATA REGISTRY  
FROM JANUARY THROUGH JUNE 1975 WERE GROUPED  
ACCORDING TO THE AIR FORCE SPECIALTY CODE,  
JOB DESCRIPTION, SHOWN FOR THE INDIVIDUAL. THE 48,  
271 RECORDS SURVEYED INCLUDED 46 JOB CODES WITH 50 OR  
MORE REPORTS AND 47 WITH FEWER THAN 50. THERE WERE  
5,298 RECORDS WITH NO IDENTIFIABLE JOB CODE. THE  
PERCENTAGE OF SIGNIFICANT THRESHOLD SHIFT WAS  
CALCULATED FOR EACH RECORD, WITH THE TOTAL GROUP  
REVEALING 23.21%. THE PERCENT SIGNIFICANT  
THRESHOLD SHIFT FOR EACH JOB CODE WITH 50 OR MORE WAS  
CALCULATED SO THAT EACH COULD BE COMPARED TO THE  
AVERAGE FOR THE ENTIRE GROUP.

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DDC REPORT BIBLIOGRAPHY      SEARCH CONTROL NO. /ZOM07

AD-A022 888                      6/10              6/5  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

INITIAL STUDY TO EVALUATE SIMPLE CRITERIA  
FOR IDENTIFYING SIGNIFICANT AMOUNTS OF  
THRESHOLD SHIFT IN PERSONS WHO WORK IN  
NOISE: JANUARY-MARCH 1975.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. JAN-OCT 75,  
FEB 76      10P      GASAWAY, DONALD C. ;  
SUTHERLAND, HARRELL C. , JR;  
REPT. NO. SAM-TR-76-7  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: \*AUDITORY ACUITY, \*OCCUPATIONAL  
DISEASES, AUDIOMETRY, THRESHOLDS(PHYSIOLOGY),  
NOISE(SOUND), EPIDEMIOLOGY, HEARING, NOISE  
POLLUTION, AIR FORCE PERSONNEL, EAR, DEAFNESS,  
SENSES(PHYSIOLOGY)

(U)

THE REPORT DESCRIBES THE CURRENT METHOD USED BY THE  
U.S. AIR FORCE TO IDENTIFY SIGNIFICANT  
AMOUNTS OF THRESHOLD SHIFT (COMPARISON OF CURRENT  
WITH REFERENCE AUDIOGRAM) AMONG PERSONS WHO MAY BE  
EXPERIENCING EARLY STAGES OF PERMANENT SENSORINEURAL  
NOISE-INDUCED HEARING LOSS. THIS STUDY USED THE  
AUDIOGRAMS OF 26,756 PERSONNEL WHO ROUTINELY WORK IN  
NOISE AND COMPARED THE TWO CURRENT USAF THRESHOLD  
SHIFT CRITERIA WITH FOUR SINGLE EXPERIMENTAL  
CRITERIA: (1) 20 DB TS AT ANY FREQUENCY,  
EITHER EAR; (2) 20 DB TS AT 2000, 3000, OR  
4000 HZ, EITHER EAR; (3) 15 DB TS AT ANY  
FREQUENCY, EITHER EAR; AND (4) AVERAGE OF 10 DB  
AT 2000, 3000, AND 4000 HZ, EITHER EAR.  
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 911 20/1  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

COMMUNITY NOISE EXPOSURE RESULTING FROM  
AIRCRAFT OPERATIONS. APPENDIX: NOISEMAP  
PROGRAM OPERATOR'S MANUAL.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
FEB 76 29P REDDINGIUS, NICOLAAS H. ;  
REPT. NO. BBN-2946  
CONTRACT: F33615-75-C-5044  
PROJ: AF-7231  
TASK: 723104  
MONITOR: AMRL TR-73-108-APP

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: APPENDIX TO REPORT DATED JUL 74,  
AD-785 360.

DESCRIPTORS: \*AIRCRAFT NOISE, \*MILITARY FACILITIES,  
\*NOISE POLLUTION, \*COMPUTER PROGRAMMING,  
COMPUTERIZED SIMULATION, DIURNAL VARIATIONS, URBAN  
AREAS, AIRPORTS, RUNWAYS, FLIGHT PATHS,  
EXPOSURE(PHYSIOLOGY), VIBRATION,  
DIAGNOSIS(GENERAL), LAND USE, USER NEEDS,  
ENVIRONMENTAL IMPACT STATEMENTS, AIR FORCE  
OPERATIONS, AREA COVERAGE, FORTRAN, COMPUTER  
PROGRAMS, COMMUNITY RELATIONS

(U)

IDENTIFIERS: NOISEMAP COMPUTER PROGRAMS, GROUND  
RUNUP, NOISE EXPOSURE

(U)

THIS REPORT DELINEATES THE PROGRAM OPERATOR CHANGES  
CONSISTENT WITH THE ADDITIONAL DEVELOPMENTS MADE ON  
THE COMPUTER PROGRAM DESCRIBED IN AMRL-TR-73-109  
(AD-A004 821). THE ADDED CAPABILITIES AND  
IMPROVED DIAGNOSTICS THAT FORM NOISEMAP 3.2 ARE  
DISCUSSED. NOISEMAP 3.2 IS USED AIR FORCE-WIDE  
TO COMPUTE COMMUNITY NOISE EXPOSURE FROM AIRCRAFT  
FLYING AND GROUND RUNUP OPERATIONS FOR PREPARING/  
ASSESSING CANDIDATE ENVIRONMENTAL IMPACT  
STATEMENTS AND PLANNING COMPATIBLE LAND USE IN THE  
VICINITY OF AIR INSTALLATIONS. IMPROVEMENTS MADE TO  
NOISEMAP INCLUDE: (1) OPTIONAL OUTPUTS IN  
TERMS OF DAY-NIGHT AVERAGE SOUND LEVEL, NOISE  
EXPOSURE FORECAST, AND THESE MEASURES WITH TONE  
CORRECTION AND GROUND RUNUP PENALTY WEIGHTINGS;  
(2) OPTIONAL CONTOUR PLOTTING ON A LINE PRINTER  
WHEN SOPHISTICATED CONTOUR PLOTTING SOFTWARE AND  
HARDWARE ARE NOT AVAILABLE; (3) OPTIONAL  
CAPABILITY TO PERFORM THE NOISE EXPOSURE COMPUTATIONS  
OVER LIMITED AREAS RATHER THAN THE ENTIRE AIRBASE (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A023 407 20/1 6/16 1/3  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

NOISE LEVELS MEASURED WITHIN AIRCRAFT DURING  
TAKEOFF, CLIMB, AND CRUISE (LOW, NORMAL,  
AND HIGH).

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. MAR-OCT 75,  
FEB 76 23P GASAWAY, DONALD C. ;  
REPT. NO. SAM-TR-76-9  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: •AIRCRAFT NOISE, •COCKPITS, •AMBIENT  
NOISE, •AUDITORY PERCEPTION, •NOISE REDUCTION,  
AUDITORY ACUITY, AUDITORY NERVE, HEARING, LEVEL  
FLIGHT, TAKEOFF, CLIMBING, AIRSPEED, RISK,  
MEDICAL RESEARCH, BIOMEDICINE, MEAN, ANALYSIS OF  
VARIANCE, STANDARD DEVIATION, EXPERIMENTAL DATA,  
ACOUSTIC MEASUREMENT, INTERNAL  
IDENTIFIERS: HEARING CONSERVATION, AUDITORY RISKS,  
UNDESIRABLE NOISE LEVELS

(U)

(U)

NOISE MEASUREMENTS OBTAINED WITHIN COCKPITS OF 12  
GROUPS OF FIXED- AND ROTARY-WING AIRCRAFT DURING  
TAKEOFF, CLIMB, AND CRUISE (LOW, NORMAL, AND  
HIGH) ARE REPORTED. MEAN, VARIANCE, AND STANDARD  
DEVIATIONS ARE REPORTED FOR EACH GROUP. DATA  
INCLUDE FLAT (F) OR C-WEIGHTED LEVELS, A-  
WEIGHTED LEVELS, AND F/C MINUS A LEVELS.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A025 446 5/10  
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

THE EFFECT OF CONTINUOUS NOISE ON SHORT  
TERM MEMORY PERFORMANCE TASKS.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
SEP 75 32P RIVENES, IVER JOHN , III;

UNCLASSIFIED REPORT

DESCRIPTORS: •MEMORY(PSYCHOLOGY),  
•NOISE(SOUND), PERFORMANCE(HUMAN), NOISE  
POLLUTION, NAVAL PERSONNEL, OFFICER PERSONNEL,  
ATTENTION, THESES, SHORT RANGE(TIME)

(U)

NAVAL OFFICERS ROUTINELY PERFORM A NUMBER OF TASKS  
REQUIRING SHORT TERM MEMORY UNDER CONDITIONS OF  
MODERATE BACKGROUND NOISE LEVELS. THE PERFORMANCE  
OF 20 NAVY OFFICERS ON A SERIAL SHORT TERM MEMORY  
TASK WAS ANALYZED UNDER TWO LEVELS OF DIFFICULTY AND  
TWO DIFFERENT SOUND LEVELS. THE PURPOSE OF THE  
EXPERIMENT WAS TO DETERMINE WHETHER MODERATE  
INTENSITY, CONTINUOUS NOISE HAD AN EFFECT ON SHORT  
TERM MEMORY. ANALYSIS OF THE DATA COLLECTED  
INDICATED THAT CONTINUOUS NOISE AT A SOUND LEVEL  
PRESSURE OF 85 DB HAD NO EFFECT ON THE SUBJECTS  
SHORT TERM MEMORY. LEVELS OF DIFFICULTY RESULTED IN  
A SIGNIFICANT DIFFERENCE IN PERFORMANCE ON THE SERIAL  
SHORT TERM MEMORY TASK USED IN THIS EXPERIMENT.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A025 789 6/16 5/10 9/2  
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF  
ENGINEERING

STATISTICAL PREDICTION OF HUMAN PERFORMANCE  
AT TWO PATTERN RECOGNITION TASKS. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,  
DEC 74 64P ANDERSON, EARLE E. ; KREMPIN,  
ARTHUR G. ;  
REPT. NO. GE/EE/74-38

UNCLASSIFIED REPORT

DESCRIPTORS: \*PATTERN RECOGNITION,  
\*PERFORMANCE(HUMAN), \*VISUAL ACUITY,  
\*CHARACTER RECOGNITION, THESES, MATHEMATICAL  
MODELS, PREDICTIONS, BIBLIOGRAPHIES, STATISTICAL  
ANALYSIS, PSYCHOPHYSIOLOGY, NOISE (U)  
IDENTIFIERS: OBJECTIVES, RECOMMENDATIONS (U)

THE OBJECTIVES OF THIS PILOT STUDY ARE TO DETERMINE  
IF IT IS POSSIBLE (1) TO PREDICT HUMAN  
PERFORMANCE TO DISPLAYED ALPHABETIC CHARACTERS THAT  
ARE PRESENTED IN A VARYING NOISE BACKGROUND AND  
(2) TO PREDICT AT WHAT RANGE PEOPLE HAVE A 50%  
PROBABILITY OF IDENTIFYING PICTURES OF ARMY VEHICLES.  
EACH OF THE PREDICTIONS IS MADE USING A MODEL OF  
THE HUMAN VISUAL SYSTEM AND STATISTICAL ANALYSIS.  
PREDICTIONS BASED ON THIS ANALYSIS ARE COMPARED TO  
PSYCHOPHYSICAL PERFORMANCE. THE RESULTS INDICATE  
THE CAPABILITY TO PREDICT THE TREND OF HUMAN  
PERFORMANCE, THUS WARRANTING IN-DEPTH RESEARCH INTO  
THESE AREAS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A025 969 6/5  
MIAMI UNIV OXFORD OHIO

EFFECTS OF SOUND ON THE VESTIBULAR  
SYSTEM.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAR 76 85P PARKER, D. E. ; RITZ, L. A.  
; TUBBS, R. L. ; WOOD, D. L. ;  
CONTRACT: F33615-73-C-4002  
PROJ: AF-7231  
TASK: 723103  
MONITOR: AMRL TR-75-89

UNCLASSIFIED REPORT

DESCRIPTORS: \*VESTIBULAR APPARATUS,  
\*NOISE(SOUND), EXPOSURE(PHYSIOLOGY),  
STIMULI, RESPONSE(BIOLOGY), GUINEA PIGS,  
MONKEYS, HUMANS, BEHAVIOR, PHYSIOLOGICAL  
EFFECTS, EQUILIBRIUM(PHYSIOLOGY), ALCOHOLS,  
THRESHOLDS(PHYSIOLOGY)

(U)

VESTIBULAR RESPONSES HAVE BEEN EVOKED FROM GUINEA  
PIGS, MONKEYS, AND HUMAN BEINGS FOLLOWING STIMULATION  
WITH STATIC PRESSURE, INFRASOUND, SUSTAINED  
AUDIOFREQUENCY SOUND, AND REPETITIVE AUDIOFREQUENCY  
TRANSIENTS. THESE OBSERVATIONS LEAD TO SUGGESTIONS  
CONCERNING THE MANNER IN WHICH SOUND AFFECTS THE  
VESTIBULAR RECEPTORS AS WELL AS TO PROPOSALS  
CONCERNING LEVELS OF SOUND EXPOSURE THAT MIGHT  
DISTURB HUMAN PERFORMANCE BY INFLUENCING BEHAVIORS  
MEDIATED AT LEAST IN PART BY THE VESTIBULAR SYSTEM.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A026 086 6/5  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

DESCRIPTION OF HEARING IN 13 GROUPS OF AIR  
FORCE PERSONNEL WHO ROUTINELY WORK IN  
NOISE: JANUARY-JUNE 1975.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. JAN-DEC 75,  
APR 76 28P GASAWAY, DONALD C. ;  
SUTHERLAND, HARRELL C. ;  
REPT. NO. SAM-TR-76-16  
PROJ: AF-7755  
TASK: 775508

UNCLASSIFIED REPORT

DESCRIPTORS: \*DEAFNESS, \*OCCUPATIONAL DISEASES,  
HEARING, NOISE POLLUTION, AIR FORCE PERSONNEL,  
THRESHOLDS(PHYSIOLOGY), AUDIOMETRY

(U)

THIS REPORT DESCRIBES THE HEARING OF 34,091  
MILITARY PERSONNEL WITHIN 13 AIR FORCE  
SPECIALTY (AFSC) KNOWN TO CONSTITUTE ROUTINE  
ENCOUNTERS WITH POTENTIALLY HAZARDOUS NOISE. THE  
SMALLEST GROUP CONTAINED 1049 PERSONS, AND THE  
LARGEST, 11,736. A TOTAL OF 7678 (22.5%) OF THE  
ENTIRE SAMPLE REVEALED SIGNIFICANT THRESHOLD SHIFT.  
CUMULATIVE PERCENTAGES OF ANNUAL AUDIOGRAMS ALONG  
WITH MEDIAN HEARING LEVELS ARE ALSO DESCRIBED. THE  
HEARING LEVELS IN THIS STUDY REVEAL THAT USAF USE  
OF SIGNIFICANT THRESHOLD SHIFTS TO IDENTIFY IN THE  
EARLY STAGES, PERSONS WHO ARE EXPERIENCING HEARING  
SHIFTS DUE TO NOISE PREVENTS SIGNIFICANT HEARING  
LOSS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A026 145 6/5  
HUMAN ENGINEERING LAB ABERDEEN PROVING GROUND MD

DETECTION OF COMBAT SOUNDS BY THE HUMAN  
EAR,

(U)

76 15P PRICE, G. RICHARD ; HODGE,  
DAVID C. ;

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*COMBAT AREAS,  
THRESHOLDS(PHYSIOLOGY), PERFORMANCE(HUMAN),  
NOISE(SOUND), DEAFNESS, SPECIFICATIONS,  
MODELS, AUDIO FREQUENCY, PREDICTIONS,  
COMPUTERIZED SIMULATION, AUDITORY PERCEPTION,  
AUDIOMETRY, DETECTION, ARMY PERSONNEL

(U)

A COMPREHENSIVE PROGRAM OF RESEARCH HAS BEEN INITIATED BY THE HUMAN ENGINEERING LABORATORY TO EXAMINE THE HEARING REQUIREMENTS OF SOLDIERS IN A VARIETY OF OPERATIONAL CONTEXTS AND TO DETERMINE THE EFFECTS OF HEARING LOSS ON PERFORMANCE. THE INITIAL FOCUS OF THIS PROGRAM IS ON THE AURAL DETECTION AND IDENTIFICATION OF COMBAT-RELEVANT SOUNDS. ONE OF THE MOST IMPORTANT CONTRIBUTIONS OF THE PRESENT EFFORT HAS BEEN THE DEVELOPMENT OF A DETECTION MODEL WHICH INCORPORATES THE EAR'S ANALYSIS OF INCOMING ENERGY INTO CRITICAL BANDS OF FREQUENCIES, AND ITS INTEGRATION OF ENERGY ARRIVING DURING A PERIOD OF 200 MSEC. BASED ON THESE THEORETICAL CONSIDERATIONS A UNIQUE COMPUTER-BASED ANALYSIS PROCEDURE WAS DEVELOPED, WHICH WAS USED TO PROVIDE A PREDICTION OF THE CRITICAL BAND(S) OF PRIMARY IMPORTANCE IN THE DETECTION OF REPRESENTATIVE COMBAT-RELEVANT SOUNDS. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A026 209 1/5 20/1 13/2  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

TEST PLAN FOR AIRCRAFT RUNUP NOISE  
PENALTY EVALUATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
MAR 76 39P FIDELL, SANFORD ;  
REPT. NO. BBN-2941  
CONTRACT: F33615-75-C-5044  
PROJ: AF-7231  
TASK: 723104  
MONITOR: AMRL TR-75-110

UNCLASSIFIED REPORT

DESCRIPTORS: \*AIRCRAFT NOISE, \*AIRPORTS, \*NOISE  
POLLUTION, MILITARY FACILITIES, MILITARY AIRCRAFT,  
ATTITUDES(PSYCHOLOGY), SURVEYS, COMMUNITIES,  
COMMUNITY RELATIONS, THRESHOLDS(PHYSIOLOGY),  
QUESTIONNAIRES, AIRCRAFT MAINTENANCE, ACOUSTICS  
IDENTIFIERS: \*AIRPORT PLANNING

(U)

(U)

THIS REPORT OUTLINES A TEST PLAN FOR CONDUCTING A  
SOCIAL SURVEY TO DETERMINE WHETHER COMMUNITY RESPONSE  
TO NOISE FROM MILITARY AIRCRAFT OPERATIONS DIFFERS  
SIGNIFICANTLY BETWEEN NOISE FROM FLIGHT OPERATIONS  
AND NOISE FROM GROUND RUNUP (MAINTENANCE)  
OPERATIONS. THE REPORT INCLUDES DISCUSSION OF THE  
METHODOLOGY AND RATIONALE FOR THE SURVEY AS WELL AS  
SAMPLE TELEPHONE AND MAIL QUESTIONNAIRES.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZQM07

AD-A026 535 20/1 13/2 1/3  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

SENSITIVITY STUDIES OF COMMUNITY-AIRCRAFT  
NOISE EXPOSURE (NOISEMAP) PREDICTION  
PROCEDURE,

(U)

MAR 76 123P BISHOP, DWIGHT E. ;  
DUNDERDALE, TOM C. ; HORONJEFF, RICHARD D. ;  
MILLS, JOHN F. ;  
REPT. NO. BBN-2956  
CONTRACT: F33615-75-C-5044  
PROJ: AF-7231  
TASK: 723104  
MONITOR: AMRL TR-75-115

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED AUG 75, AD-  
A017 741.

DESCRIPTORS: \*AIRCRAFT NOISE, \*COMMUNITY RELATIONS,  
NOISE POLLUTION, EXPOSURE (GENERAL), MODELS,  
MATHEMATICAL PREDICTION, COMPUTER APPLICATIONS,  
AIRPORTS, SENSITIVITY, LEVEL (QUANTITY), AIR  
FORCE RESEARCH, NOISE REDUCTION  
IDENTIFIERS: NOISEMAP, NOISE LEVELS, \*NOISE  
EXPOSURE

(U)

(U)

THIS REPORT DESCRIBES A PRELIMINARY STUDY OF THE  
SENSITIVITY OF NOISE EXPOSURE CONTOURS TO VARIOUS  
AIRCRAFT NOISE MODELING PARAMETERS AND ASSUMPTIONS.  
THE STUDY IS THE FIRST STEP IN A CONTINUING  
TECHNICAL ASSESSMENT OF THE AIR FORCE COMMUNITY-  
AIRCRAFT NOISE EXPOSURE (NOISEMAP) PREDICTION  
PROCEDURE. THE RESULTS INDICATE THAT THE ADDITION  
OF A TONE CORRECTION TO THE NOISE MEASURE CAN RESULT  
IN APPRECIABLE INCREASE IN NOISE EXPOSURE AREAS, BUT  
THE INCREASE IS HIGHLY DEPENDENT ON THE TYPE OF  
AIRCRAFT OPERATIONS. COMPUTATION OF CONTOUR AREAS  
FOR NINE BASES WITH AND WITHOUT THE GROUND RUNUP  
PENALTY SHOWED HOW THE PERCENT OF AREA IMPACTED  
INCREASED WITH INCREASING NOISE EXPOSURE LEVEL. USE  
OF ALTERNATE ALGORITHMS FOR GROUND-TO-GROUND  
PROPAGATION AND TRANSITIONS FOR AIR-TO-GROUND AND  
GROUND-TO-GROUND SITUATIONS IS DISCUSSED.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-AD26 856 5/8 20/1 5/8  
ROYAL NAVAL PERSONNEL RESEARCH COMMITTEE LONDON  
(ENGLAND)

THE EFFECT OF PRIOR NOISE OR PRIOR  
PERFORMANCE ON SERIAL REACTION,

(U)

NOV 73 18P HARTLEY, L. R. ;  
REPT. NO. OES-13/74  
MONITOR: DRIC BR-52186

UNCLASSIFIED REPORT

DESCRIPTORS: \*MAN MACHINE SYSTEMS,  
\*NOISE(SOUND), HEARING,  
PERFORMANCE(HUMAN), ERRORS, REACTION TIME,  
RESPONSE(BIOLOGY), EFFICIENCY, HIGH INTENSITY,  
SCORING, GREAT BRITAIN

(U)

THIRTEEN NAVAL RATINGS PERFORMED THE 5-CHOICE  
SERIAL REACTION TASK FOR 40 MIN, AND ALSO FOR THE  
LAST 20 MIN OF A 40 MIN PERIOD, UNDER EACH OF THE  
FOLLOWING 4 CONDITIONS: (1) QUIET FOR THE  
FULL 40 MIN. (2) 100DB(A) NOISE FOR THE FULL  
40 MIN. (3) QUIET FOR THE FIRST 20 MIN  
FOLLOWED BY NOISE FOR THE LAST 20 MIN. (4)  
NOISE FOLLOWED BY QUIET. OVERALL PERFORMANCE  
DURING THE LAST 20 MIN WAS ASSESSED BY THE SUM OF  
ERRORS, AND GAPS LONGER THAN 1.5 SEC BETWEEN  
RESPONSES. THE TIME INTERVAL BETWEEN SUCCESSIVE  
RESPONSES WAS MEASURED TO THE NEAREST 0.2 SEC.  
COMPARED WITH QUIET FOR THE FULL 40 MIN,  
PERFORMANCE DURING THE LAST 20 MIN WAS IMPAIRED TO  
ABOUT THE SAME EXTENT BY WORKING IN NOISE AFTER 20  
MIN IN QUIET, AS BY WORKING IN QUIET AFTER 20 MIN IN  
NOISE. NOISE FOR THE FULL 40 MIN PRODUCED THE  
GREATEST IMPAIRMENT. ERRORS WERE MORE LIKELY TO  
HAVE RESPONSE TIMES OF 0.4 SEC AND BELOW THAN WERE  
CORRECT RESPONSES. IT FOLLOWS THAT AFTER A PERSON  
HAS BEEN EXPOSED TO HIGH INTENSITY NOISE FOR AN  
APPRECIABLE PERIOD OF TIME, HE MAY NEED A PERIOD IN  
QUIET IN ORDER TO REGAIN THE LEVEL OF EFFICIENCY  
WHICH HE HAD BEFORE HE WAS EXPOSED TO THE NOISE. (U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A027 141 20/1 6/6 5/9  
ROYAL NAVAL PERSONNEL RESEARCH COMMITTEE LONDON  
(ENGLAND)

EFFECT OF NOISE ON THE STROOP TEST, (U)

MAR 74 14P HARTLEY, L. R. ; ADAMS, R.  
G. I  
REPT. NO. OES-16/74  
MONITOR: DRIC BR-52536

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE, \*SOUND PITCH, \*ACOUSTIC  
MEASUREMENT, \*NAVAL PERSONNEL, BROADBAND, RATINGS,  
PERFORMANCE TESTS, JOB ANALYSIS, QUIET,  
PERFORMANCE(HUMAN),  
REACTION(PSYCHOLOGY) (U)  
IDENTIFIERS: BROADBAND NOISE, \*NOISE LEVELS,  
NOISE PERCEPTION (U)

NOISE INCREASES THE INTERFERENCE BETWEEN COLOURS  
AND CONFLICTING COLOUR NAMES. THE INTERFERENCE  
INCREASES WITH THE TIME SPENT IN THE NOISE. THIS  
COULD BE DUE TO THE OVERAROUSAL PRODUCED BY THE  
NOISE, OR TO THE PERCEPTUAL ISOLATION WHICH THE NOISE  
ALSO PRODUCES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A027 142 13/2 6/19  
ROYAL NAVAL PERSONNEL RESEARCH COMMITTEE LONDON  
(ENGLAND)

PERFORMANCE DURING CONTINUOUS AND VARIABLE  
INTERMITTENT NOISE AND WEARING EAR  
PROTECTION;

(U)

MAR 74 13P HARTLEY, L. R. ;  
REPT. NO. OES-14/74  
MONITOR: DRIC BR-52537

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE POLLUTION;  
\*PERFORMANCE(HUMAN), NOISE(SOUND),  
AUDITORY PERCEPTION, COMPARISON, ERRORS,  
BROADBAND, LOUDNESS, EAR PROTECTORS, VARIATIONS,  
GREAT BRITAIN

(U)

IN EXPERIMENT 1 36 CIVILIANS PERFORMED THE 5-  
CHOICE SERIAL REACTION TASK FOR 40 MIN UNDER EACH OF  
THE FOLLOWING 3 CONDITIONS: (1) CONTINUOUS  
BROADBAND NOISE WITH EQUAL ENERGY PER OCTAVE AT A  
SOUND PRESSURE LEVEL OF 95 DBC. (2) QUIET,  
THE SAME NOISE AT 70 DBC. (3) VARIABLE  
INTERMITTENT NOISE ALTERNATING BETWEEN 70 AND 95  
DBC AT IRREGULAR INTERVALS, WITH THE DURATION OF  
THE NOISE BURSTS AVERAGING TWICE THE DURATION OF THE  
QUIET INTERVALS. THERE WERE MORE GAPS OF 1.5 SEC OR  
LONGER BETWEEN RESPONSES IN THE VARIABLE INTERMITTENT  
NOISE THAN IN QUIET. THE INCREASE WAS TWICE AS  
GREAT IN THE CONTINUOUS NOISE. THE BENEFICIAL  
EFFECT OF CHANGING FROM THE CONTINUOUS NOISE TO THE  
VARIABLE INTERMITTENT NOISE WAS PROBABLY DUE TO THE  
INCREASE IN VARIETY PRODUCED BY THE VARIABLE  
INTERMITTENT NOISE. IN EXPERIMENT 2 16 CIVILIANS  
PERFORMED THE 5-CHOICE SERIAL REACTION TASK FOR 40  
MIN UNDER EACH OF THE FOLLOWING 4 CONDITIONS:  
(1) THE BROADBAND NOISE AT 95 DBC. (2)  
QUIET, THE SAME NOISE AT 70 DBC. (3) AND  
(4) THE SAME NOISE AND QUIET, BUT WEARING EAR  
MUFFS. WITHOUT THE EAR MUFFS THERE WERE MORE GAPS  
IN NOISE THAN IN QUIET. EAR MUFFS PREVENTED THE  
DETRIMENTAL EFFECT OF THE NOISE, BUT ONLY DURING THE  
FIRST 20 MIN OF THE 40 MIN TASK. DURING THE SECOND  
HALF OF THE TASK THE CIVILIANS WITHOUT EAR MUFFS HAD  
PROBABLY ADAPTED TO THE NOISE. THUS THEIR  
PERFORMANCE DID NOT SUFFER SO MUCH FROM THE LACK OF  
EAR MUFFS. ERRORS WERE NOT AFFECTED BY ANY OF THE  
EXPERIMENTAL CONDITIONS.

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UNCLASSIFIED

/ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A027 143 13/2 6/19  
ROYAL NAVAL PERSONNEL RESEARCH COMMITTEE LONDON  
(ENGLAND)

COMPARISON OF PERFORMANCE WITH HEADPHONE AND  
FREE-FIELD NOISE,

(U)

MAR 74 9P HARTLEY, L. R. ;  
REPT. NO. OES-15/74  
MONITOR: DRIC BR-52535

UNCLASSIFIED REPORT

DESCRIPTORS: •NOISE POLLUTION,  
•PERFORMANCE(HUMAN), NOISE(SOUND),  
AUDITORY PERCEPTION, COMPARISON, FREE FIELD,  
ERRORS, BROADBAND, LOUDNESS, GREAT BRITAIN  
IDENTIFIERS: HEADPHONES

(U)

(U)

FOURTEEN NAVAL RATINGS AND 1 HOUSEWIVES PERFORMED  
THE 5 CHOICE SERIAL REACTION TASK FOR 40 MIN UNDER  
EACH OF THE FOLLOWING 4 CONDITIONS: (1)  
CONTINUOUS BROADBAND NOISE WITH EQUAL ENERGY PER  
OCTAVE, PRESENTED THROUGH HEADPHONES AT A SOUND  
PRESSURE LEVEL OF 95 DBC. (2) THE SAME  
NOISE PRESENTED IN A FREE FIELD WITHOUT HEADPHONES.  
(3 AND 4) THE BROADBAND NOISE PRESENTED WITH  
AND WITHOUT HEADPHONES AT 70 DBC. IN THE NOISE  
THERE WERE MORE GAPS OF 1.5 SEC BETWEEN RESPONSES.  
THE HEADPHONE NOISE PRODUCED MORE GAPS THAN THE  
FREEFIELD NOISE. THERE WERE ALSO MORE ERRORS IN THE  
NOISE. THE INCREASE IN ERRORS OCCURRED AT ONCE IN  
THE FREE FIELD NOISE, BUT ONLY IN THE LAST 20 MIN OF  
THE 40 MIN PERIOD WITH THE HEADPHONE NOISE. THE  
EARLIER AND MORE MARKED EFFECT IN THE FREE FIELD IS  
PROBABLY DUE TO THE GREATER APPARENT LOUDNESS OF THE  
NOISE, WITH THE CONSEQUENT INCREASE IN ANNOYANCE. (U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A027 737 13/2 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

SOME THOUGHTS ON HEARING CONSERVATION:  
POSSIBLE CORRECTIONS TO EQUAL ENERGY RULE  
TO ACCOUNT FOR INTERMITTENCY AND IMPULSE  
NOISE.

(U)

75 5P JOHNSON, DANIEL L. ;  
REPT. NO. AMRL-TR-75-4  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT  
AVAILABILITY: PUB. IN PROCEEDINGS OF THE  
TECHNICAL PROGRAM - NOISE EXPO, P1-4 1975.  
SUPPLEMENTARY NOTE: PRESENTED AT THE NATIONAL NOISE  
AND VIBRATION CONTROL CONFERENCE, 30 APR-2 MAY 75,  
ATLANTA, GA.

DESCRIPTORS: \*NOISE POLLUTION, \*IMPULSE NOISE,  
HEARING, NOISE(SOUND), FEDERAL LAW,  
EXPOSURE(PHYSIOLOGY), AUDIOMETRY,  
THRESHOLDS(PHYSIOLOGY), DEAFNESS, REPRINTS  
IDENTIFIERS: EQUAL ENERGY RULE, ENVIRONMENTAL  
PROTECTION AGENCY

(U)

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THIS PAPER CONSIDERS TWO RELATED TOPICS. THE  
FIRST TOPIC CONCERNS A POSSIBLE COMPROMISE BETWEEN  
USING THE EQUAL ENERGY RULE (3 DB/HALVING OF  
TIME) AND THE 5 DB RULE (5 DB HALVING OF  
TIME) FOR EVALUATING NONSTEADY NOISES. BY USING  
THIS COMBINATION, IT IS POSSIBLE TO PRESERVE ONE OF  
THE KEY BENEFITS OF THE EQUAL ENERGY RULE. THIS  
BENEFIT IS THAT IT CAN REASONABLY APPROXIMATE THE  
HEARING CRITERIA FOR IMPULSE NOISE EXPOSURE.  
DISCUSSION OF THE USE OF EQUAL ENERGY FOR ASSESSING  
IMPULSE NOISE EFFECTS MAKES UP THE SECOND PART OF  
THIS PAPER. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A027 807 13/2 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

SUMMARY OF PRESENT DAMAGE RISK CRITERIA,

(U)

76 16P VON GIERKE, H. E. ; JOHNSON,  
DANIEL L. ;  
REPT. NO. AMRL-TR-75-58  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE INTERNATIONAL  
SYMPOSIUM, THE EFFECTS OF NOISE ON HEARING-  
CRITICAL ISSUES, 22-25 JUN 75, CAZENOVIA, N.  
Y.

DESCRIPTORS: •NOISE POLLUTION,  
•STRESS(PHYSIOLOGY), RISK ANALYSIS,  
EXPOSURE(PHYSIOLOGY),  
THRESHOLDS(PHYSIOLOGY), LONG RANGE(TIME),  
CRITERIA, DEAFNESS, SAFETY, TRADE OFF ANALYSES,  
STANDARDS, PREDICTIONS, PHYSIOLOGICAL EFFECTS  
IDENTIFIERS: HEARING LOSS

(U)

(U)

THIS SUMMARY MAINTAINS THAT IN SPITE OF  
UNCERTAINTIES AND OPEN SCIENTIFIC QUESTIONS, THE  
AVAILABLE DATA BASE IS CONSISTENT ENOUGH TO PREDICT  
FOR PREVENTIVE/PROTECTIVE PURPOSES THE AMOUNT OF  
NOISE-INDUCED PERMANENT THRESHOLD SHIFT TO BE  
EXPECTED IN A POPULATION AS A RESULT OF HABITUAL  
NOISE EXPOSURE. FOR NOISE EXPOSURE LEVELS TO HAVE  
NO EFFECT ON A POPULATION'S HEARING AFTER 40 YEARS OF  
DAILY EXPOSURE, A 'SAFE' LEVEL OF APPROXIMATELY 75  
DB(A) IS DERIVED FOLLOWING THE ARGUMENTS ADVANCED  
IN THE EPA 'LEVELS DOCUMENT.'

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A030 042 19/3 6/19  
MICHIGAN TECHNOLOGICAL UNIV HOUGHTON KEWEENAW RESEARCH  
CENTER

THE STUDY OF VIBRATIONS GENERATED BY THE  
TRACKS OF TRACKED VEHICLES,

(U)

JUL 76 52P LEE, S. M. ;  
CONTRACT: DAAE07-75-A-0508

UNCLASSIFIED REPORT

DESCRIPTORS: •VEHICLE TRACKS, •TRACKED VEHICLES,  
•STRESS(PHYSIOLOGY), VIBRATION, LOW FREQUENCY,  
TANKS(COMBAT VEHICLES), TANK CREWS, NOISE,  
HEARING, DAMAGE, DEAFNESS, SELF PROPELLED GUNS,  
ROADWHEELS, IDLER WHEELS

(U)

THE CREW MEMBERS OF TRACKED VEHICLES ARE AFFECTED ADVERSELY BY LOW FREQUENCY VIBRATIONS TRANSMITTED TO THE VEHICLE COMPARTMENT FROM THE VIBRATIONS OCCURRING IN THE TRACK. THE NOISE AND VIBRATION LEVEL IN THE CREW COMPARTMENT CAN CAUSE HEARING DAMAGE AND SERIOUS DISCOMFORT TO THE CREW MEMBERS RESULTING IN SERIOUS DEGRADATION OF EFFICIENCY. THESE NOISE AND VIBRATION ARE CAUSED BY THE TRANSMISSION OF THE VIBRATIONS OCCURRING IN THE TRACK AS IT LEAVES THE REAR ROAD WHEEL AND GOES OVER THE IDLER AND ENGAGES THE SPROCKET. THE CHORDAL ACTION IN VARIOUS PARTS OF THE TRACK CORRESPONDING TO THE RESONANCE-TYPE VIBRATIONS ALSO CONTRIBUTE TO THE NOISE AND VIBRATION. THESE FACTORS, THEREFORE, INDICATE LOSS OF ENERGY GENERATED BY THE ENGINE IN ADDITION TO THE DISCOMFORT TO THE CREW. THIS IS AN ANALYTICAL STUDY OF THE VIBRATIONS GENERATED BY THE TRACK OF TRACKED VEHICLES. A METHOD OF ANALYSIS IS DERIVED FROM THE TECHNIQUE OF RECEPTANCE CALCULATION. BY THIS MEANS, THE RATIO OF DISPLACEMENT AT THE IDLER WHEEL SUPPORT TO A PERIODIC FORCE APPLIED AT THE REAR ROAD WHEEL, AS THE TRACK PADS STRIKE THE ROAD, IS CALCULATED. THIS RATIO CAN BE OBTAINED WITH DUE REGARD TO THE VARIOUS PHYSICAL PARAMETERS DESCRIBING THE CHARACTERISTICS OF THE TRACK CONFIGURATION AND THE BOUNDARY CONDITIONS AT THE IDLER WHEEL SUPPORT. ANALYSIS OF FORCES ACTING ON THE IDLER WHEEL SUPPORT ALSO YIELDS RESULTS DESCRIBING FAVORABLE IDLER WHEEL CONFIGURATION, COMPLIANCE OF IDLER ARM, AND THE SIZE OF THE TRACK SHOE ASSEMBLY. COMBINATION OF THESE RESULTS CAN BE USED TO PREDICT OPTIMUM CONDITIONS UNDER WHICH THE VIBRATION OF A PRESCRIBED FREQUENCY CAN BE MINIMIZED.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A030 896 13/2  
BOLT BERANEK AND NEWMAN INC ARLINGTON VA

HEARING CONSERVATION PROGRAM PROTOTYPE  
PHASE FINAL REPORT.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,  
SEP 76 163P LEHR,J. ;NELSON,D. ;  
SUTTERLIN,M. ;  
REPT. NO. BBN-3222  
CONTRACT: N00014-75-C-0057

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE REDUCTION, \*NOISE POLLUTION,  
\*SHIP NOISE, MACHINERY NOISE, ENGINE NOISE,  
STANDARDS, SHIPBOARD  
IDENTIFIERS: FF 1052 CLASS VESSELS, FF 1070  
VESSEL, FF 1082 VESSEL

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THIS REPORT COVERS THE PROTOTYPE PHASE OF AN OPNAV SPONSORED HEARING CONSERVATION PROGRAM. THE OBJECTIVE OF THE PROTOTYPE PHASE WAS TO DEMONSTRATE THE FEASIBILITY OF REDUCING MACHINERY SPACE NOISE LEVELS SUFFICIENTLY TO COMPLY WITH BUMED/OSHA HEARING DAMAGE RISK CRITERIA. THE USS ELMER MONTGOMERY (FF 1082), THE DESIGNATED PROTOTYPE SHIP, WAS SUBJECTED TO COMPREHENSIVE UNDERWAY AND DOCKSIDE DIAGNOSTIC NOISE TESTING. THE TESTS INDICATED THAT EVEN AT NOMINAL 15 TO 20 KNOT CRUISING SPEEDS, NOISE LEVELS AT MANY MANNED LOCATIONS IN THE ENGINE ROOM AND FIRE ROOM EXCEEDED THE BUMED 90 DBA HEARING DAMAGE RISK CRITERION. CONCEPTUAL APPROACHES FOR NOISE CONTROL TREATMENT WERE PROVIDED TO THE NAVAL SHIPYARD WHICH DEVELOPED THE DESIGN FOR THE PROTOTYPE TREATMENTS. SUBSEQUENT NOISE TRIALS CONDUCTED TO ASSESS THE PERFORMANCE OF THE PROTOTYPE TREATMENTS INDICATED THE PREDICTED NOISE REDUCTION FROM THE TREATMENTS WAS ACHIEVED. NOISE TRIALS WERE ALSO CONDUCTED ON A SECOND SHIP IN THE CLASS, THE USS DOWNES (FF 1070), TO INSURE THAT DIFFERENCES IN EQUIPMENT MANUFACTURE OR SHIPYARD CONSTRUCTION PRACTICES DID NOT RESULT IN SIGNIFICANT DIFFERENCES IN THE NOISE ENVIRONMENT WITHIN THE FF 1052 CLASS MACHINERY SPACES. THE REPORT CONCLUDES WITH A RECOMMENDED NOISE CONTROL PACKAGE FOR SHIPS OF THE FF 1052 CLASS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A031 087 13/2  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

BEHAVIORAL EFFECTS OF CHRONIC EXPOSURE TO  
IMPULSIVE NOISE IN PRIMATES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JAN 72-JUN 74,  
MAR 75 27P KOESTLER, ALFRED G. ; DALTON,  
LESLIE ;  
REPT. NO. AMRL-TR-75-42  
CONTRACT: DOT-FA70WAI-181  
PROJ: AF-7231  
TASK: 723103  
MONITOR: FAA-RD 75-85

UNCLASSIFIED REPORT

DESCRIPTORS: \*IMPULSE NOISE, \*NOISE POLLUTION,  
PHYSIOLOGICAL EFFECTS, FEMALES, CHIMPANZEES,  
EXPOSURE(PHYSIOLOGY), BEHAVIOR,  
PERFORMANCE(HUMAN), PSYCHOMOTOR FUNCTION,  
AMBIENT NOISE, STIMULI, RESPONSE(BIOLOGY)

(U)

TWO YOUNG FEMALE CHIMPANZEES WERE EXPOSED TO 35  
IMPULSIVE ACOUSTIC STIMULI EACH NIGHT FOR 180  
CONSECUTIVE NIGHTS. DAYTIME PERFORMANCE ON A  
TEMPORAL DISCRIMINATION PSYCHOMOTOR TASK DETERIORATED  
FOLLOWING INITIATION OF THE ACOUSTIC EXPOSURES.  
ADAPTATION TO BASELINE PERFORMANCE WAS OBSERVED FOR  
ONE SUBJECT AND SUGGESTED FOR THE OTHER. BOTH  
EXHIBITED PREEXPOSURE PERFORMANCE AFTER THE IMPULSES  
CEASED. CAGE MOVEMENTS WERE MEASURED FOR BOTH  
SUBJECTS IN RESPONSE TO EVERY IMPULSE NOISE  
PRESENTATION OVER THE 180 DAYS. THE STUDY  
DEMONSTRATED PERFORMANCE DECREMENTS WHICH SHOWED  
ADAPTATION OVER TIME AS WELL AS GENERAL BEHAVIOR  
CHANGES AND SLEEP INTERFERENCE WHICH DID NOT SHOW  
ADAPTATION OVER 180 DAYS. ALL BEHAVIORAL CHANGES  
WHICH OCCURRED DURING THE EXPOSURE DISAPPEARED AFTER  
THE NOISE EXPOSURES WERE TERMINATED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A031 366 13/2 6/19 20/1  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

CRITERIA FOR EVALUATING THE HARMFUL EFFECTS  
OF NOISE,

(U)

JUN 76 LIP VON GIERKE, H. E. MEYER, A.  
F. I  
REPT. NO. AMRL-TR-75-43  
PROJ: AF-6231  
TASK: 623103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE INTERNATIONAL  
CONGRESS, MAN AND NOISE, 6-10 JUN 75, TURIN  
(ITALY). THIS PAPER IS A CONDENSED VERSION OF REPT.  
NO. AMRL-TR-75-40.

DESCRIPTORS: \*NOISE POLLUTION, \*NOISE(SOUND),  
CRITERIA, NOISE REDUCTION, PHYSIOLOGICAL EFFECTS,  
ENVIRONMENTAL PROTECTION, INDUSTRIAL NOISES,  
LEVEL(QUANTITY), STANDARDS, PUBLIC HEALTH,  
HEARING

(U)

PLANNING AND EXECUTION OF AN EFFECTIVE NOISE  
CONTROL PROGRAM REQUIRES DEFINITION OF THE HARMFUL  
EFFECTS OF NOISE TO BE PREVENTED AND THE  
ESTABLISHMENT OF GOALS TO BE ACHIEVED. IN RESPONSE  
TO THE NOISE CONTROL ACT OF 1972 THE US  
ENVIRONMENTAL PROTECTION AGENCY CONDUCTED  
STUDIES TO CLARIFY THE CAUSE AND EFFECTS  
RELATIONSHIPS BETWEEN THE NOISE ENVIRONMENT AND  
VARIOUS HEALTH EFFECTS, WHICH WERE PUBLISHED IN A  
CRITERIA DOCUMENT. BASED ON THESE FINDINGS  
ENVIRONMENTAL NOISE LEVELS WERE IDENTIFIED, AT OR  
BELOW WHICH THE POPULATION WOULD BE PROTECTED AGAINST  
ADVERSE EFFECTS ON HEALTH AND WELFARE; THIS  
INFORMATION WAS PUBLISHED IN THE LEVELS DOCUMENT.  
THE RATIONALE FOR SELECTING BASICALLY ONE  
DESCRIPTOR FOR CHARACTERIZING NOISE ENVIRONMENTS WITH  
RESPECT TO THEIR HEALTH EFFECTS AND THE JUSTIFICATION  
FOR THE LEVELS SELECTED BASED ON HEARING CONSERVATION  
AND ACTIVITY INTERFERENCE/ANNOYANCE CRITERIA WILL BE  
DISCUSSED. THE USE OF THESE LEVELS IN THE OVERALL  
ENVIRONMENTAL NOISE CONTROL PROGRAM AND THEIR  
RELATIONSHIP TO INDUSTRIAL/OCCUPATIONAL NOISE  
EXPOSURE LIMIT LEVELS WILL BE EXPLAINED. (AUTHOR)

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A031 382 13/2 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

LONG-DURATION EXPOSURE TO INTERMITTENT  
NOISES,

(U)

76 6P JOHNSON, DANIEL L. ; NIXON,  
CHARLES W. ; STEPHENSON, MARK R. ;  
REPT. NO. AMRL-TR-76-41  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AVIATION, SPACE AND  
ENVIRONMENTAL MEDICINE, V47 N9 P987-990 SEP 76.

DESCRIPTORS: \*IMPULSE NOISE, \*NOISE POLLUTION,  
HEARING, PHYSIOLOGICAL EFFECTS,  
THRESHOLDS(PHYSIOLOGY), LONG RANGE(TIME),  
EXPOSURE(PHYSIOLOGY), RECOVERY, REPRINTS  
IDENTIFIERS: HEARING LOSS

(U)

(U)

THE EFFECTS WERE EXAMINED OF VARIOUS PATTERNS OF  
INTERRUPTION-OF CONTINUOUS NOISE BY PERIODS OF QUIET-  
ON THE GROWTH AND RECOVERY OF TEMPORARY THRESHOLD  
SHIFT OF HEARING OVER AN EXPOSURE PERIOD OF 24 H.  
MONAURAL THRESHOLD OF HEARING WERE MEASURED PRIOR  
TO, DURING, AND FOLLOWING EXPOSURE TO A PINK NOISE AT  
A LEVEL OF 85 DBA AND TO FOUR CONDITIONS IN WHICH  
THE PINK NOISE WAS INTERRUPTED WITH VARIOUS ON-OFF  
RATIOS. THE INTERRUPTED EXPOSURE PATTERNS AND  
LEVELS WERE ADJUSTED TO MAKE THEIR AVERAGE LEVELS  
EQUIVALENT TO 85 DBA. AMONG THE RESULTS:

(1) THE GROWTH OF TTS CLEARLY REACHED ON  
ASYMPTOTE FOR ALL INTERRUPTED EXPOSURE CONDITIONS,  
EVEN WHEN THE TTS WAS AS SMALL AS 5 DB, (2)  
THE INTERRUPTED EXPOSURES PRODUCED LOWER ASYMPTOTIC  
LEVELS THAN THE CONTINUOUS EXPOSURE WITH THE SAME  
AMOUNT OF ENERGY, AND (3) THE TTS RECOVERY  
PATTERNS WERE ESSENTIALLY THE SAME AT 1 H AND BEYOND,  
FOR ALL CONDITIONS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A032 015 13/2  
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

HEARING LEVELS OF NOISE-EXPOSED U.S.  
AIR FORCE PERSONNEL COMPARED TO THOSE IN  
THE TOTAL U. S. POPULATION.

(U)

DESCRIPTIVE NOTE: PROGRESS REPT. JAN-JUN 75,  
SEP 76 18P SUTHERLAND, HARRELL C. , JR.;  
GASAWAY, DONALD C. ;  
REPT. NO. SAM-TR-76-27  
PROJ: 7755  
TASK: 08

UNCLASSIFIED REPORT

DESCRIPTORS: •HEARING, •NOISE POLLUTION  
IDENTIFIERS: LEVELS(QUANTITY),  
THRESHOLDS(PHYSIOLOGY), AIR FORCE PERSONNEL,  
COMPARISON, AGE DISTRIBUTION, WUSAM77550802,  
PE62202F

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HEARING THRESHOLD LEVELS AS REPORTED ON FORMS  
RECEIVED AT THE USAF HEARING CONSERVATION  
DATA REGISTRY WERE STUDIED. FORMS RECEIVED  
DURING JANUARY THROUGH JUNE 1975 WERE INCLUDED.  
MEDIAN HEARING LEVELS FOR BOTH MILITARY AND  
CIVILIAN USAF PERSONNEL WERE FOUND TO BE GENERALLY  
BETTER THAN IN THE NONINSTITUTIONALIZED UNITED  
STATES POPULATION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A032 028 20/1 1/3  
MAN-ACOUSTICS AND NOISE INC SEATTLE WASH

NOISE CERTIFICATION CONSIDERATIONS FOR  
HELICOPTERS BASED ON LABORATORY  
INVESTIGATIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

JUL 76 108P  
REPT. NO. MAN-1014  
CONTRACT: DOT-FA74WAI-490  
MONITOR: FAA-RD 76-116

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED NOV 75, AD-  
A018 036.

DESCRIPTORS: \*NOISE POLLUTION, \*HELICOPTERS,  
\*SHORT TAKEOFF AIRCRAFT, \*PSYCHOPHYSICS, AIRCRAFT  
NOISE, ACOUSTIC MEASUREMENT, HUMAN FACTORS  
ENGINEERING, INTENSITY, EXPOSURE(GENERAL),  
STATISTICAL PROCESSES, SIMULATION, MODELS,  
ANALYSIS OF VARIANCE, ENVIRONMENTAL PROTECTION,  
EXPERIMENTAL DATA, COMMUNITY RELATIONS, LABORATORY  
TESTS

(U)

IDENTIFIERS: ANNOYANCE, NOISE LEVELS,  
CERTIFICATION

(U)

THIS IS THE SECOND PART OF A PROGRAM CONCERNING  
NOISE CERTIFICATION FOR V/STOL AND HELICOPTER  
AIRCRAFT. ASPECTS CONSIDERED WERE: AN  
ENGINEERING CALCULATION PROCEDURE WHICH VALIDLY AND  
RELIABLY REFLECTS ANNOYANCE TO HELICOPTER OPERATIONS;  
ESTIMATES OF NOISE EXPOSURE LEVELS WHICH COULD BE  
COMPATIBLE WITH HUMAN ACTIVITIES IN AREAS SURROUNDING  
HELIPORTS; NOISE EXPOSURE MODELING FOR HELICOPTER  
NOISE; CERTIFICATION MEASUREMENT APPROACHES FOR  
HELICOPTER NOISE CERTIFICATION. THE BASICS OF THE  
PROGRAM INVOLVED HUMAN RESPONSE EVALUATIONS OF  
CONVENTIONAL TAKE-OFF AND LANDING (CTOL) AIRCRAFT  
NOISE, SIMULATIONS OF HELICOPTER NOISE EMPHASIZING  
'SLAP' OR PULSATING NOISE EFFECTS, AND RECORDINGS OF  
A WIDE VARIETY OF HELICOPTER OPERATIONS.

(U)



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDM07

AD-A032 156 6/19  
ROYAL NAVAL PERSONNEL RESEARCH COMMITTEE LONDON  
(ENGLAND)

THE EFFECTS OF NOISE AND OF LOSS OF SLEEP  
UPON THE OBSERVATION OF 3 SOURCES OF SIGNALS  
WITH UNEQUAL PROBABILITIES.

(U)

AUG 73 16P ROBERT, G. ; HOCKEY, J. ;  
REPT. NO. OES-11/74  
MONITOR: DRIC BR-51849

UNCLASSIFIED REPORT

DESCRIPTORS: \*SLEEP DEPRIVATION, \*NOISE POLLUTION,  
\*ATTENTION, PERFORMANCE(HUMAN), SONAR  
OPERATORS, NAVAL PERSONNEL, MILITARY  
FORCES(FOREIGN), VIGILANCE, ENLISTED PERSONNEL,  
DETECTION, DECISION MAKING, GREAT BRITAIN

(U)

THREE GROUPS OF 12 NAVAL RATINGS HAD TO MONITOR 3  
SOURCES OF SIGNALS, AND TO REPORT EACH TIME THEY  
DETECTED A SIGNAL. A SOURCE WAS CHECKED BY PRESSING  
THE CORRESPONDING KEY AND LOOKING FOR A DULL RED  
FLASH. ONE GROUP WORKED WITH AND WITHOUT NOISE.  
THE OTHER GROUP WORKED AFTER A NIGHT WITHOUT SLEEP  
AND AFTER NORMAL SLEEP. NOISE HAS A BENEFICIAL  
EFFECT IN MAKING THE MAN CONCENTRATE MORE ON THE MOST  
PROBABLE SOURCE OF SIGNALS. BUT NOISE HAS A  
DETRIMENTAL EFFECT IN INCREASING THE NUMBER OF MISSES  
IN THE SECOND HALF OF THE EXPERIMENTAL PERIOD.  
WHEREAS LOSS OF A NIGHT'S SLEEP HAS ONLY  
DETRIMENTAL EFFECTS. IT STOPS THE MAN FROM  
CONCENTRATING MORE ON THE MOST PROBABLE SOURCE OF  
SIGNALS. AND IT MAKES HIM REQUIRE MORE EVIDENCE  
BEFORE HE REPORTS A SIGNAL.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A032 401 6/19 6/6  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

INFRASOUND, ITS SOURCES AND ITS EFFECTS ON  
MAN,

(U)

MAY 76 11P JOHNSON, DANIEL L. ;  
REPT. NO. AMRL-TR-76-17  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT ELECTRO 76, BOSTON,  
MASS. 11-14 MAY 76 SPONSORED BY INSTITUTE OF  
ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

DESCRIPTORS: \*NOISE POLLUTION, \*INFRASONIC  
RADIATION, \*STRESS(PHYSIOLOGY),  
NOISE(SOUND), EXPOSURE(PHYSIOLOGY),  
PHYSIOLOGICAL EFFECTS, HUMANS, LOW FREQUENCY,  
VIBRATION, SOURCES, HEARING,  
THRESHOLDS(PHYSIOLOGY)

(U)

IDENTIFIERS: \*ENVIRONMENTAL HEALTH

(U)

INFRASOUND, SINUSOIDAL PRESSURE VARIATIONS FROM 0.1  
TO 20 HZ, IS SOMEWHAT MORE COMPLICATED TO MEASURE  
AND ANALYZE THAN SOUND OF HIGHER FREQUENCY. BUT THE  
MOST COMMON ERROR IN ANALYZING INFRASOUND IS NOT TO  
ALSO MEASURE THE HIGHER FREQUENCY SOUNDS AND THEN  
INTERPRET THESE SOUNDS WITH RESPECT TO THEIR EFFECTS  
ON HUMANS. GENERALLY, WHERE THERE IS INTENSE  
INFRASOUND, THERE ARE ALSO INTENSE SOUNDS ABOVE 20  
HZ; AND THESE ARE THE SOUNDS THAT CAUSE ADVERSE  
HUMAN EFFECTS. AT SUFFICIENT INTENSITY INFRASOUND  
IS AUDIBLE, BUT IS EASILY MASKED BY HIGHER FREQUENCY  
SOUND. INFRASOUND DOES NOT OFTEN OCCUR AT LEVELS  
THAT ARE HARMFUL OR EVEN AUDIBLE TO MAN. THUS  
INFRASOUND EXPOSURE IS NOT ONE OF MANKINDS MORE  
PRESSING ENVIRONMENTAL PROBLEMS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A032 971 13/2 15/5  
ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG  
MISS

THE EFFECT OF MILITARY TRANSPORTATION  
ACTIVITIES ON THE ENVIRONMENT,

(U)

DEC 73 75P GREEN, A. J. ; RANDOLPH, D.  
D. ; RULA, A. A. ;  
REPT. NO. WES-MP-M-73-15

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY ARMY  
CONSTRUCTION ENGINEERING RESEARCH LAB., CHAMPAIGN,  
ILL.

DESCRIPTORS: \*MILITARY TRANSPORTATION,  
\*ENVIRONMENTAL PROTECTION, SURVEYS, AIR QUALITY,  
NOISE POLLUTION, VIBRATION, WATER QUALITY, SOIL  
SCIENCE, MILITARY VEHICLES, VEGETATION,  
DEGRADATION, HYDROLOGY

(U)

IDENTIFIERS: \*ENVIRONMENTAL IMPACTS

(U)

THE STUDY REPORTED WAS UNDERTAKEN TO EVALUATE THE  
IMPACT OF MILITARY TRANSPORTATION ACTIVITIES UPON  
RELATED ENVIRONMENTAL ATTRIBUTES. THE MILITARY  
ACTIVITIES WERE RELATED TO THEIR IMPACT ON THESE  
ATTRIBUTES BY MEANS OF A MATRIX. THIS MATRIX USED  
A SCALE TO IDENTIFY THE MAGNITUDE AND PROBABILITY OF  
THE IMPACT. ADDITIONALLY, KNOWN MITIGATION AND  
ABATEMENT PRACTICES THAT CAN BE USED TO MINIMIZE  
ADVERSE ENVIRONMENTAL IMPACTS WERE IDENTIFIED AND  
BRIEFLY DESCRIBED. THE PRINCIPAL CONCLUSION WAS  
THAT THIS TECHNIQUE PROVIDED A FIRST APPROXIMATION  
FOR ASSESSING THE EFFECT OF MILITARY TRANSPORTATION  
ON THE ENVIRONMENT.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A033 468 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

AFTEREFFECTS OF RANDOM AND FIXED INTERMITTENT  
SOUND ON HUMAN PERFORMANCE,

(U)

SEP 76 12P HARRIS, C. STANLEY ;  
REPT. NO. AMRL-TR-76-75  
PROJ: AF-7231  
TASK: 723103

UNCLASSIFIED REPORT

DESCRIPTORS: \*STRESS(PHYSIOLOGY),  
\*NOISE(SOUND), HIGH FREQUENCY,  
PERFORMANCE(HUMAN), INTENSITY, STIMULI,  
RESPONSE(BIOLOGY)  
IDENTIFIERS: INTERMITTENT NOISE

(U)  
(U)

RECENT RESEARCH SUGGESTS THAT UNPREDICTABLE NOISE CAN ADVERSELY AFFECT HUMAN PERFORMANCE SUBSEQUENT TO THE NOISE EXPOSURE. THREE GROUPS OF SUBJECTS WERE EXPOSED TO VARIOUS UNPREDICTABLE NOISES IN THREE EXPERIMENTS. THE NOISE STIMULUS USED IN THE FIRST EXPERIMENT WAS THE SOUND OF AN AUTOMOBILE HORN, AND IN THE LAST TWO EXPERIMENTS VARIOUS MIXED SOUNDS WERE PRESENTED. IN EACH EXPERIMENT THERE WAS (1) A CONTROL CONDITION, (2) A FIXED INTERMITTENT CONDITION, AND (3) A RANDOM INTERMITTENT CONDITION. TESTING WAS CONDUCTED FOR A 30 MINUTE PERIOD ON AN ARITHMETIC ADDITION TASK DURING EACH NOISE EXPOSURE. SUBSEQUENT TO THE NOISE EXPOSURE, PERFORMANCE WAS MEASURED FOR 15 MINUTES ON A PROOFREADING TASK IN EXPERIMENT 1 AND 2 AND ON A SERIAL SEARCH TASK IN EXPERIMENT 3. THERE WERE NO ADVERSE EFFECTS OF NOISE ON PERFORMANCE OF THE ADDITION TASK IN ANY OF THE THREE EXPERIMENTS. SIMILARLY, NO ADVERSE AFTEREFFECTS WERE OBTAINED IN EXPERIMENT 1 OR IN EXPERIMENT 3. HOWEVER, IN EXPERIMENT 2 THE MIXED SOUND STIMULUS PRODUCED AN ADVERSE AFTEREFFECT ON PERFORMANCE OF THE PROOFREADING TASK. THE FIXED INTERMITTENT NOISE CONDITION PRODUCED STATISTICALLY SIGNIFICANT LESS EFFICIENT PROOFREADING PERFORMANCE THAN THE CONTROL CONDITION AND THE RANDOM INTERMITTENT NOISE CONDITION.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A033 497 21/8.2 21/9.2 5/11  
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT  
PARIS (FRANCE)

SMALL SOLID PROPELLANT ROCKETS FOR FIELD  
USE.

(U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS.

76 154P

REPT. NO. AGARD-CP-194

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO-FURNISHED. PAPERS PRESENTED  
AT THE MEETING OF THE AGARD PROPULSION AND  
ENERGETICS PANEL (47TH), 17-19 MAY 76, HELD AT  
DFVLR PORZ-WAHN (WEST GERMANY).

DESCRIPTORS: •SOLID PROPELLANT ROCKET ENGINES,  
•CONFERENCES, ANTITANK WEAPONS, ANTIAIRCRAFT  
WEAPONS, ARTILLERY ROCKETS, PROPULSION SYSTEMS,  
THRUST VECTOR CONTROL SYSTEMS, HIGH ENERGY  
PROPELLANTS, IGNITION, NOISE,  
SHOCK(MECHANICS), GUNNERS, HUMAN FACTORS  
ENGINEERING, SHOULDER LAUNCHED WEAPONS, TACTICAL  
WEAPONS, DOUBLE BASE ROCKET PROPELLANTS, INTERIOR  
BALLISTICS, SHELF LIFE, RECOILLESS GUNS, FIELD  
TESTS, NATO

(U)

IDENTIFIERS: 110-MM AMMUNITION

(U)

THE SPECIALISTS' MEETING IS DEVOTED TO  
TECHNOLOGICAL PROBLEMS ASSOCIATED WITH PROPULSION  
SYSTEMS OF ADVANCED SMALL ROCKET MOTORS FOR ANTI-  
TANK, ANTI-AIRCRAFT, AND LIGHT ARTILLERY ROCKETS.  
AFTER SPECIFICATION OF THE REQUIREMENTS FOR THE  
THREE TYPES OF WEAPON SYSTEMS, PROBLEMS OF SYSTEMS  
DEVELOPMENT WILL BE DISCUSSED INCLUDING THE  
OPTIMIZATION AND MATCHING OF PROPULSION SYSTEMS AS  
WELL AS NEW METHODS FOR CONTROL AND THRUST VECTORING.  
HIGH ENERGY SOLID PROPELLANTS AND IGNITION PROBLEMS  
WILL BE REVIEWED. A DISCUSSION OF IMPORTANT  
PROBLEMS OF APPLICATION, SUCH AS NOISE AND SHOCK  
EFFECTS ON THE GUNNER, WILL TERMINATE THE SESSIONS.  
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOH07

AD-A033 666 6/10 6/19  
ARMY AEROMEDICAL RESEARCH LAB FORT RUCKER ALA

EFFECT OF IMPULSE NOISE ON HEARING; A  
SELECT BIBLIOGRAPHY,

(U)

NOV 76 24P BULLOCK, SYBIL H. ;  
REPT. NO. USAARL-SPECIAL BIB-SER-10

UNCLASSIFIED REPORT

DESCRIPTORS: \*IMPULSE NOISE, \*BIBLIOGRAPHIES,  
HEARING, CRITERIA, SMALL ARMS, INDUSTRIAL  
HYGIENE, THRESHOLDS(PHYSIOLOGY), GUNFIRE,  
DEAFNESS

(U)

THIS BIBLIOGRAPHY CONTAINS REFERENCES TO BOOKS,  
TECHNICAL REPORTS, AND JOURNAL ARTICLES ON THE  
EFFECTS OF IMPULSE NOISE ON HEARING. IT COVERS  
PRIMARILY THE 1950'S TO THE PRESENT TIME; THE  
ARRANGEMENT IS ALPHABETICALLY BY AUTHOR.  
(AUTHOR)

(U)



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A034 051 20/1 13/2  
NAVAL UNDERSEA CENTER SAN DIEGO CALIF

SUMMARY REPORT OF THE NAVY CONFERENCE ON  
ENVIRONMENTAL NOISE 18-20 NOVEMBER 1975.

(U)

MAR 76 56P  
REPT. NO. NUC-TP-520  
PROJ: YF59.592  
TASK: YF59.592.001

UNCLASSIFIED REPORT

DESCRIPTORS: •NOISE POLLUTION, •NAVAL PLANNING,  
•MEETINGS, ENVIRONMENTAL PROTECTION, AIRCRAFT  
NOISE, SHIP NOISE, NAVAL SHORE FACILITIES,  
PHYSIOLOGICAL EFFECTS, PSYCHOLOGICAL DISTRESS,  
NOISE REDUCTION, COMMUNITY RELATIONS, SHIPBOARD,  
DATA ACQUISITION  
IDENTIFIERS: OCCUPATIONAL NOISE

(U)  
(U)

THE NAVY CONFERENCE ON ENVIRONMENTAL NOISE  
WAS HELD AT THE NAVAL ACADEMY, ANNAPOLIS, IN  
NOVEMBER 1975 UNDER JOINT SPONSORSHIP OF NAVMAT,  
ONR, AND BUMED. THE PURPOSE WAS AN IN-HOUSE  
REVIEW OF THE NAVY'S CAPABILITIES, PLANS, PROGRAMS,  
AND NEEDS IN THE AREA OF ENVIRONMENTAL AND  
OCCUPATIONAL NOISE. THIS GENERAL AREA DEALS WITH  
AIRBORNE NOISE -- ITS SOURCES (ON SHIPS, AIRCRAFT,  
AND ASHORE), ITS EFFECTS ON PERSONNEL (THOSE IN  
THE OPERATIONAL AND WORK ENVIRONMENT, AND THOSE  
EXPOSED TO NAVY NOISE IN THE OFF-STATION OR HOME  
ENVIRONMENT), AND METHODS FOR NOISE ABATEMENT.  
THIS REPORT SUMMARIZES THE PROCEEDINGS,  
CONCLUSIONS, AND RECOMMENDATIONS OF THE CONFERENCE.  
THE PRINCIPAL OUTPUTS ARE THE RECOMMENDATIONS OF  
THE FOUR WORKSHOPS IN THE AREAS OF (1) MEDICAL  
PROBLEMS, (2) AIRCRAFT NOISE, (3) SHORE  
AND COMMUNITY NOISE, AND (4) SHIPBOARD NOISE.  
THE EXECUTIVE SUMMARY PROVIDES A CONCISE OVERALL  
REVIEW OF THE CONFERENCE GOALS AND FINDINGS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A034 605 6/19 13/2 20/1  
DAYTON UNIV OHIO RESEARCH INST

EVALUATION OF SAFE EXPOSURE GUIDELINES FOR  
MODERATE AND HIGH INTENSITY CONTINUOUS  
NOISE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 1 FEB 75-31 JUL 76,  
NOV 76 147P SCHORI, THOMAS R. ;  
CONTRACT: F33615-75-C-5055  
PROJ: AF-6231  
TASK: 623103  
MONITOR: AMRL TR-76-97

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-767 205.

DESCRIPTORS: \*NOISE, \*HEARING, GUIDES,  
THRESHOLDS(PHYSIOLOGY),  
EXPOSURE(PHYSIOLOGY), METHODOLOGY, AUDIOMETRY,  
DEAFNESS, AUDITORY ACUITY, FREQUENCY,  
TABLES(DATA), EXPERIMENTAL DATA, RATINGS,  
SCALE, TEST AND EVALUATION, SAFETY, INDUSTRIAL  
HYGIENE

(U)

IDENTIFIERS: \*NOISE POLLUTION, APPENDICES,  
OCCUPATIONAL HEALTH AND SAFETY, THRESHOLD LIMIT  
VALUES

(U)

THE TTS2 (TEMPORARY THRESHOLD SHIFT MEASURED  
TWO MINUTES AFTER NOISE TERMINATION) CONSEQUENCES  
OF BRIEF NOISE EXPOSURES WERE SYSTEMATICALLY  
EVALUATED. SPECIFICALLY, FORTY SUBJECTS WERE  
TESTED AT EACH OF 10 APPROPRIATELY SPACED NOISE  
EXPOSURE LEVELS. THE 90TH PERCENTILE TTS2 AT 4000  
HZ WAS DETERMINED FOR EACH EXPOSURE LEVEL AND THEN  
A MULTIPLE REGRESSION EQUATION WAS FITTED TO THESE  
VALUES. FROM THIS EQUATION, A 5 DB EQUAL 90TH  
PERCENTILE TTS2 CURVE WAS CALCULATED, WHICH  
REPRESENTS THE AUTHORS PREDICTIONS AS TO THE TRADE-  
OFFS BETWEEN NOISE INTENSITY AND EXPOSURE DURATION  
NECESSARY TO PRODUCE 90TH PERCENTILE TTS2S OF 5  
DB. A COMPARISON OF THE AUTHORS PREDICTIONS TO  
THOSE OF THE ENVIRONMENTAL PROTECTION AGENCY  
(EPA) (IN THE AREA OF UNCERTAINTY) SUGGESTS  
THAT THE CONSERVATIVE EPA PREDICTIONS MAY BE TOO  
CONSERVATIVE WHILE THE EPA'S MODIFIED AND EXTENDED  
NATIONAL RESEARCH COUNCIL COMMITTEE ON  
HEARING, BIOACOUSTICS, AND BIOMECHANICS  
(CHABA) CRITERION PREDICTIONS MAY NOT BE  
SUFFICIENTLY CONSERVATIVE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A035 084 5/10 6/16 6/14  
HUMAN ENGINEERING LAB ABERDEEN PROVING GROUND MD

COMBAT SOUND DETECTION: I. MONAURAL  
LISTENING IN QUIET.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,  
DEC 76 44P PRICE, G. RICHARD HODGE,  
DAVID C. ;  
REPT. NO. HEL-TM-35-76

UNCLASSIFIED REPORT

DESCRIPTORS: \*HEARING, \*COMBAT NOISE, AUDITORY  
DEFECTS, AUDITORY PERCEPTION,  
PERFORMANCE(HUMAN), MILITARY PERSONNEL,  
DETECTION

(U)

THE PRESENCE OF ENEMY PERSONNEL IS OFTEN REVEALED BY THE NOISES THEY OR THEIR EQUIPMENT MAKE. A PREDICTIVE MODEL WAS DEVISED WHICH TOOK ACCOUNT OF THE SPECTRAL AND TEMPORAL DISTRIBUTION OF ENERGY IN THE SOUNDS, AND THE SPECTRAL SENSITIVITY OF THE EARS DETECTING THEM. PREDICTIONS WERE COMPARED WITH ACTUAL DETECTIONS FOR 20 EARS AS THEY LISTENED FOR 24 DIFFERENT RECORDED SOUNDS (WALKING NOISES, RIFLE BOLT, ETC.). CORRELATIONS BETWEEN PREDICTIONS AND DETECTIONS RANGED FROM .89 TO .98. THE SAME MODEL WAS THEN USED WITH DATA FROM A RECENT SURVEY OF HEARING IN THE COMBAT ARMS TO PREDICT DETECTION OF THE SAME SOUNDS. PRELIMINARY DATA INDICATE THAT SIMPLE DETECTION (THE PERFORMANCE MEASURED IN THESE STUDIES) DOES NOT REVEAL THE TRUE DIFFERENCES BETWEEN EARS WITH HEARING LOSSES AND THOSE IN THE NORMAL RANGE. AUDITORY PERFORMANCE IS EXPECTED TO BE BEST DESCRIBED BY THE EAR'S ABILITY TO IDENTIFY THE SOUNDS, RATHER THAN SIMPLY DETECT THEM.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A036 224 13/2 6/19  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

DEVELOPMENT OF A UNIFORM APPROACH TO  
CHARACTERIZE NOISE IMPACT ON PEOPLE.

(U)

DESCRIPTIVE NOTE: JOURNAL REPRINT,  
76 10P VON GIERKE, HENNING E. ;  
REPT. NO. AMRL-TR-75-40  
PROJ: 7231  
TASK: 03

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN AVIATION, SPACE AND  
ENVIRONMENTAL MEDICINE, P45-53 JAN 76.  
SUPPLEMENTARY NOTE: PRESENTED AT ANNUAL AEROSPACE  
MEDICAL ASSOCIATION MEETING (46TH) HELD IN SAN  
FRANCISCO, CALIF., 27 APR-2 MAY 75.

DESCRIPTORS: •NOISE POLLUTION, •AIRCRAFT NOISE,  
POLLUTION ABATEMENT, NOISE(SOUND),  
ENVIRONMENTAL MANAGEMENT, PUBLIC HEALTH, PLANNING,  
COSTS, REPRINTS  
IDENTIFIERS: PE62202F

(U)

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EFFECTIVE PLANNING REQUIRES VALID CHARACTERIZATION  
AND PREDICTION OF THE NOISE ENVIRONMENT, AN  
UNDERSTANDING OF THE ORIGIN OF THE NOISE AND THE  
CONTRIBUTION OF VARIOUS SOURCES, AND THE LEGAL POWER  
TO CONTROL NOISE GENERATION AND ENFORCE LANDING-USE  
PLANNING. AS A MATTER OF FACT, SOME OF THE  
TREMENDOUS PROGRESS MADE IN PRODUCING THE NEW,  
QUIETER GENERATION COMMERCIAL JET AIRCRAFT, SUCH AS  
THE DC10 OR L1011, IS ALMOST IN VAIN UNLESS  
PROPER LAND-USE PLANNING AROUND AIRPORTS PREVENTS  
FURTHER ENCROACHMENT OF RESIDENTIAL AREAS ON THE  
AIRPORT. A NOISE CONTROL PROGRAM WHICH DOES NOT  
ADDRESS ALL PHASES OF THE TOTAL SYSTEM-NOISE SOURCES,  
TRANSMISSION PATH TO THE RECEIVER, AND THE RECEIVER  
OF THE NOISE; I.E., THE COMMUNITIES AND THE PEOPLE IN  
THEM-MUST REMAIN EFFECTIVE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A036 535 6/10 13/10  
BOLT BERANEK AND NEWMAN INC CANOGA PARK CALIF

OCCUPATIONAL NOISE EXPOSURE ON FF 1052  
(KNOX) AND DD 963 (SPRUANCE) CALSS SHIPS,

(U)

JAN 77 170P KUGLER, B. ANDREW ;HALE,  
MARLUND E. ;RENTZ, PETER E. ;  
REPT. NO. BBN-3410

UNCLASSIFIED REPORT

DESCRIPTORS: \*NOISE POLLUTION, \*OCCUPATIONAL  
DISEASES, \*SHIP DESIGN, NOISE REDUCTION, NAVAL  
PERSONNEL, SHIP PERSONNEL, SURFACE SHIPS, COST  
ANALYSIS, SHIP NOISE, DATA BASES, ENGINE NOISE,  
LEVEL(QUANTITY)

(U)

IDENTIFIERS: FF-1052 CLASS VESSELS, DD-963 CLASS  
VESSELS

(U)

THIS STUDY INVESTIGATES THE SHIPBOARD PERSONNEL  
NOISE EXPOSURE PROBLEM BY ANALYZING THE AVAILABLE  
NOISE LEVEL DATA ON TWO SURFACE SHIP CLASSES  
CURRENTLY OPERATIONAL IN THE FLEET. THESE ARE THE  
FF 1052 (KNOX) CLASS AND THE DD 963  
(SPRUANCE) CLASS. THE FINAL OBJECTIVE OF THE  
STUDY IS A FIRST ORDER ESTIMATE OF THE COSTS OF  
ENGINEERING NOISE CONTROLS NECESSARY TO COMPLY WITH  
CURRENT/PROPOSED PERSONNEL NOISE EXPOSURE STANDARDS.  
THE STANDARDS EVALUATED ARE THE NAVY  
COMPARTMENT CATEGORY D, BUMED INSTRUCTION  
6260.4B, THE PRESENT OSHA NOISE STANDARD AND THE  
PROPOSED OSHA NOISE STANDARD. ALTHOUGH THE  
PRESENT EVALUATION IS RESTRICTED TO ENGINEERING  
SPACES (I.E., ENGINE ROOMS, FIRE ROOMS, AUXILIARY  
ROOMS, ETC.), THE MODEL FOR PERSONNEL NOISE  
EXPOSURE EVALUATION AND NOISE CONTROL ASSESSMENT  
DEVELOPED IN THIS STUDY IS MEANT TO BE GENERAL AND IS  
APPLICABLE TO OTHER SPACES ABOARD THESE SHIPS AND TO  
OTHER CLASSES IN THE FLEET.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A036 949 6/16  
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB  
OHIO

INFRASOUND,

(U)

76 43P GIERKE, H. E. VON ; PARKER,  
D. E. ;  
REPT. NO. AMRL-TR-75-99  
PROJ: 7231

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN HANDBOOK OF SENSORY  
PHYSIOLOGY (WEST GERMANY) V5 PT3 P585-624 1976.

DESCRIPTORS: •AUDITORY PERCEPTION, PHYSIOLOGICAL  
EFFECTS, IMPULSE NOISE, EAR, MASKING, VIBRATION,  
THRESHOLDS(PHYSIOLOGY), LOUDNESS, SPEECH  
RECOGNITION, LITERATURE SURVEYS, REPRINTS  
IDENTIFIERS: •INFRASONICS, PE62202F

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CONTENTS: INFRASOUND STIMULI; RECEPTION OF  
INFRASOUND ENERGY; DIRECT AUDITORY RESPONSE  
TO INFRASOUND -- PERCEPTION AND  
OVERSTIMULATION; EFFECTS OF INFRASOUND ON  
AUDIOFREQUENCY SOUND RECEPTION; INDIRECT  
AUDITORY RESPONSE TO INFRASOUND; NONAUDITORY  
RESPONSE TO INFRASOUND; AND PROPOSED EXPOSURE  
LIMITS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-B002 067 20/1 17/1 6/16  
WYLE LABS HAMPTON VA

CORRELATION OF ACTUAL AND ANALYTICAL  
HELICOPTER AURAL DETECTION CRITERIA. VOLUME  
1.

(U)

DESCRIPTIVE NOTE: FINAL CONTRACTOR REPT. MAR 73-DEC  
74,

JAN 75 135P ABRAHAMSON, A LOUIS ;  
CONTRACT: DAAJ02-73-C-0057  
PROJ: DA-1-F-126205-AH-88  
TASK: 1-F-126205-AH-8801  
MONITOR: USAAMRDL TR-14-102A

UNCLASSIFIED REPORT

DESCRIPTORS: (\*AIRCRAFT NOISE, HELICOPTERS),  
(\*AIRCRAFT DETECTION, \*AUDITORY PERCEPTION),  
(\*SOUND TRANSMISSION, AIRCRAFT NOISE), HEARING,  
FACTOR ANALYSIS, RANGE(DISTANCE), ATTENTION,  
ARMY PERSONNEL, TERRAIN, MASKING, ATTENUATION,  
AMBIENT NOISE, FLIGHT PATHS, METEOROLOGICAL DATA,  
EXPERIMENTAL DATA, DATA REDUCTION, STATISTICAL  
ANALYSIS, MATHEMATICAL MODELS, VALIDATION, FIELD  
TESTS, CORRELATION TECHNIQUES, AERODYNAMIC NOISE,  
JET ENGINE NOISE, GEAR NOISE, WIND, LOW  
ALTITUDE, POWER SPECTRA, TACTICAL AIR SUPPORT,  
ARMY AIRCRAFT

(U)

IDENTIFIERS: \*HELICOPTER NOISE

(U)

THIS STUDY WAS CONCEIVED AS A BASIC EXPERIMENT FOR  
MEASUREMENT OF HELICOPTER AURAL DETECTABILITY, AND  
FOR ASSESSMENT OF THE ACCURACY OF A MODEL DEVELOPED  
BY OLLERHEAD FOR COMPUTING AURAL DETECTION  
DISTANCES. THE EXPERIMENT WAS CONDUCTED OVER A  
PERIOD OF TWO WEEKS AT NASA WOLLOPS STATION  
UTILIZING 25 ARMY PERSONNEL AS LISTENING SUBJECTS,  
AND THREE DIFFERENT TYPES OF HELICOPTERS CURRENTLY IN  
ARMY SERVICE. THE EFFECT OF THE FOLLOWING  
PARAMETERS WAS INVESTIGATED: AMBIENT NOISE LEVEL,  
FLIGHT PROFILE, LISTENER ATTENTIVENESS, ATMOSPHERIC  
CONDITIONS. REDUCTION OF DATA WAS EXECUTED USING A  
NEW PROCEDURE FOR SIMULATING AURAL FREQUENCY  
DECOMPOSITION OF SOUND. CORRELATION WITH  
OLLERHEAD'S MODEL CONFIRMED HIS LABORATORY-DERIVED  
DETECTABILITY CRITERION AS A MEDIAN CASE FOR  
INDIVIDUAL RESPONSE AND ALLOWED EXTENSION OF THE  
CRITERION IN THE CONTEXT OF A MEASURED STATISTICAL  
DISTRIBUTION. PUBLISHED DATA INCLUDED IN  
OLLERHEAD'S MODEL FOR SOUND ATTENUATION,

(U)

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CORPORATE AUTHOR - MONITORING AGENCY

•ABERDEEN PROVING GROUND MD MATERIEL  
TESTING DIRECTORATE  
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APG-MT-4183  
SPECIAL STUDY OF  
ANTHROPOMORPHIC SIMULATORS FOR USE  
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•ACOUSICAL SOCIETY OF AMERICA NEW  
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ACOUSICAL SOCIETY OF AMERICA (80TH  
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3 NOVEMBER 1970.  
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AND DEVELOPMENT PARIS (FRANCE)  
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VIBRATION AND NOISE.  
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STRESS-INFLUENCE OF INTERACTING  
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AGARD-CP-170  
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EXPOSURE ON HEARING AND HEALTH.  
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TEMPORARY THRESHOLD SHIFT IN  
SUCCESSIVE SESSIONS FOR SUBJECTS  
EXPOSED TO CONTINUOUS AND PERIODIC  
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THE EFFECTS OF HIGH INTENSITY  
NOISE ON HUMAN EQUILIBRIUM,  
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HUMAN RESPONSE TO SONIC BOOM IN  
THE LABORATORY AND THE COMMUNITY,  
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COMBINED EFFECTS OF NOISE AND  
VIBRATION ON MENTAL PERFORMANCE.  
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AND VIBRATION STRESS ON HUMAN  
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AND THEIR APPLICATIONS, 26-28  
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MATHEMATICAL MODEL OF THE BODY,  
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EFFECTS OF NOISE ON SERIAL  
SEARCH PERFORMANCE.  
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MULTI-TASK TIME-SHARING  
REQUIREMENTS.  
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TWO EXPERIMENTS ON THE EFFECTS  
OF COMBINED HEAT, NOISE AND  
VIBRATION STRESS,  
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NOISE AND VIBRATION STRESS,  
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EFFECTS OF INCREASING INTENSITY  
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CONTINUOUS 1000-HZ TONES ON HUMAN  
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 CONTINUOUS NOISE ON SERIAL SEARCH  
 PERFORMANCE.  
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 COMBINED EFFECTS OF NOISE AND  
 VIBRATION ON HUMAN TRACKING  
 PERFORMANCE AND RESPONSE TIME,  
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 APPLICATION GUIDE FOR PREDICTIVE  
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 TECHNICAL REVIEW.  
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 APPENDIX: NOISEMAP PROGRAM  
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INTENSITY CONTINUOUS NOISE.  
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NOISE SURVEY OF AUXILIARY  
SUPPORT EQUIPMENT AT ONE ATLAS  
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